

How to Create the DMR PLUS Functionality with Radio Controlled Profile Switching

Opening Assumptions

Your openSPOT is configured to use Profile 0 for normal BrandMeister Network Connections

You know how to insert talk groups and operate your radio's CPS.

You know your radio's DMR-ID, openSPOT frequency, and color code.

Let's get started

We will be adding a few new Group Contacts to your radio's 'Contacts' so that we can control what profile and talk path we want from the radio. We will be adding 'commands' that the openSPOT will understand to switch between 'Profile 0' (the default) and 'Profile 1', which we will call "DMR Plus".

From the openSPOT online manual we find Norbert's explanation:

Config profile settings

You can use 5 different config profile slots. You can switch between them on the web interface, or by using your radio:

DMR: call the *Profile query/change base DMR ID* (by default it's 9000) with the new profile number appended to the base ID. Example: you want to switch to profile 4, and your query/change base DMR ID is 9000: you have to call 90004 with a short PTT press.

DMR: call the *Profile query/change base DMR ID* with a short PTT press (by default it's 9000).

You can rename the active profile, copy it to another slot or export/import to/from a config file.

Open your current Code Plug in CPS

Before going any further, SAVE AS a new code plug file with a different name!

Now we can proceed without fear of losing any existing code plug data.

We need to ensure that we retain the existing structure of the 'Contacts' list so make sure that the **"Contact List Sort" checkbox is not checked and remains unchecked!**

Scroll to the bottom of the contact list and ensure you have some space to add/insert new contacts.

The contact list must have less than 1023 entries for Hytera.

Move down to the line where we will INSERT the new talk groups (90000 and 90001)

Contact List Sort

No.	Call Alias	Call Type	Call ID
169	BM XRF PATCH	Group Call	31210
170	NJ-TRBO	Group Call	31360
171	TGIF BM	Group Call	31665
172	FLA.DMR.NET 1	Group Call	90175
173	FLA-DMR.NET 2	Group Call	90275
174	CENCAL 236225	Group Call	236225
175	BM LOCAL 1	Group Call	311307
176	BM NASA	Group Call	316272
177	BM KSC	Group Call	316274
178	DISNEY NETWORK	Group Call	347639
179	BM ARES	Group Call	3112904
180	DCI COMM 1	Group Call	3777215
181	DCI COMM 2	Group Call	3777216
182	PRIVATE CODE	Group Call	3777999
183	31326	Group Call	31326
184	AA2XR IAN	Private Call	3112546
185	AA4FL JAY	Private Call	3112954
186	AA4JS JON	Private Call	3112565

Select the row for Line 172 and press the “Insert” ‘button’.

INSERT will add a new line below the selected line!

No.	Call Alias	Call Type	Call ID
164	BM CALL AREA 9	Group Call	31099
165	TAC-FL	Group Call	31120
166	1ST COAST	Group Call	31121
167	SOUTH-EAST-FL	Group Call	31124
168	ORLANDO-FL	Group Call	31126
169	BM XRF PATCH	Group Call	31210
170	NJ-TRBO	Group Call	31360
171	TGIF BM	Group Call	31665
172	Call 1	Group Call	12
173	FLA.DMR.NET 1	Group Call	90175
174	FLA-DMR.NET 2	Group Call	90275
175	CENCAL 236225	Group Call	236225
176	BM LOCAL 1	Group Call	311307
177	BM NASA	Group Call	316272
178	BM KSC	Group Call	316274
179	DISNEY NETWORK	Group Call	347639
180	BM ARES	Group Call	3112904
181	DCI COMM 1	Group Call	3777215

Now we have a new Line to enter our new ‘Contacts’ and retain the proper sequence order.

Add two new ‘Group Calls’ numbers 90000 and 90001 and label them as shown here:

No.	Call Alias	Call Type	Call ID
164	BM CALL AREA 9	Group Call	31099
165	TAC-FL	Group Call	31120
166	1ST COAST	Group Call	31121
167	SOUTH-EAST-FL	Group Call	31124
168	ORLANDO-FL	Group Call	31126
169	BM XRF PATCH	Group Call	31210
170	NJ-TRBO	Group Call	31360
171	TGIF BM	Group Call	31665
172	PROFILE 0	Group Call	90000
173	PROFILE 1	Group Call	90001
174	FLA.DMR.NET 1	Group Call	90175
175	FLA-DMR.NET 2	Group Call	90275
176	CENCAL 236225	Group Call	236225
177	BM LOCAL 1	Group Call	311307
178	BM NASA	Group Call	316272
179	BM KSC	Group Call	316274
180	DISNEY NETWORK	Group Call	347639
181	BM ARES	Group Call	3112904

Make sure that you also have a 'Group Call' for ID # 5000 and ID # 4000 which should already be in your 'Contact List. We will need to add 'Group Call' 4600 for the DMR PLUS FLORIDA reflector if not already present. INSERT will add a new line below the selected line!

No.	Call Alias	Call Type	Call ID
128	TX-OK+DMR-2	Group Call	3175
129	SOUTHWEST REG	Group Call	3176
130	MOUNTAIN REGION	Group Call	3177
131	N.ENG-NBRUNS	Group Call	3181
132	FUSION LINK	Group Call	3182
133	CACTUS REGION	Group Call	3185
134	OS DISCONNECT	Group Call	4000
135	DMR + FLORIDA	Group Call	4600
136	HYTERA USA LINK	Group Call	4639
137	OS CONN QUERY	Group Call	5000
138	TAC-1	Group Call	8951
139	TAC-2	Group Call	8952
140	TAC-3	Group Call	8953
141	OS PROFILE QRY	Group Call	9000
142	OS IP QUERY	Group Call	9001
143	EMCOM US	Group Call	9911
144	BM PARROT	Group Call	9990
145	OS QUERY/PARROT	Group Call	9998

At this point we will need to create the new 'Channels' for the new functions.

In Hytera CPS it is NOT possible to insert or create channels except at the end of the channels list so remember where and what you call these channels!

We will be adding six new channels for these functions. Make things easy, add one new channel, go back and copy the data from an existing openSPOT channel and copy it over the newly created channel(s).

In sequence add the following channels with the Time Slots and Group calls:

Channel Name	Time Slot	Group Call	Function
PROFILE 1	1 (Not Critical)	TG 90001 "PROFILE 1"	Change OS to Profile 1
STATUS	2	TG 5000 "OS CONN QUERY"	Check Status of Reflector
DMR + FLORIDA	2	TG 4600 "DMR + FLORIDA"	Connect to "FLORIDA"
DMR + TALK	2	TG 9 "LOCAL REPEATER"	TALK IN QSO
DMR + DISCONNECT	2	TG 4000 "OS DISCONNECT"	DISCONNECT Reflector
PROFILE 0	1 (Not Critical)	TG 90000 "PROFILE 0"	Change OS to Profile 0

Using these channels in sequence will change and reboot the openSPOT to Profile #1. You will check the status (usually not in use – no response), connect to the FLORIDA reflector, hold your QSO, disconnect when finished, and change the openSPOT back to profile 0 and reboot.

Create a new Zone ("DMR PLUS"), add the six new channels above, save the file and write to your radio!

Edit the openSPOT Profiles

We are now ready to add the data to your openSPOT profile for "Profile 1" which will be used for the DMR Plus network (the new channels we just created).

Log into your openSPOT web interface.

Select 'Advanced mode' checkbox (lower right).

I will assume that all of your current settings are already in Profile Slot 0.

Remember to verify the frequency and color code of your openSPOT (you will need this later).

Select the 'Settings' TAB from the top menu on the openSPOT.

Scroll down to the "Copy" box. Copy the active profile (profile 0) to profile 1.

Now scroll up to "Change Active profile and select profile 1, then press "Change".

The openSPOT will change to profile 1 and reboot automatically. Log back into the openSPOT.

Select 'Advanced mode' checkbox (lower right).

Select the 'Settings' TAB from the top menu on the openSPOT.

Verify that you are now on profile 1 in the top box.

Scroll down to the "Change name" box and set the Active profile name to "DMR PLUS" and select "Save".

Select the "Connectors" TAB from the top. Edit the connector to DMRplus dongle from the active connector selector, select "Switch to selected". If the openSPOT reboots, log back in and get back to the "Connectors" page.

Set the DMR/DMRplus dongle settings to these server numbers but use **your DMR ID** and openSPOT frequency:

DMR/DMRplus dongle Save

Modem receive frequency (MHz): 446.575000

Modem transmit frequency (MHz): 446.575000

Server: USA-NYC

Server address: 104.128.230.153

Port: 8880

Add server Remove

DMR ID: 3112798

Reflector: 4000 No Link

Reflector ID: 4000

Keepalive interval (sec): 1

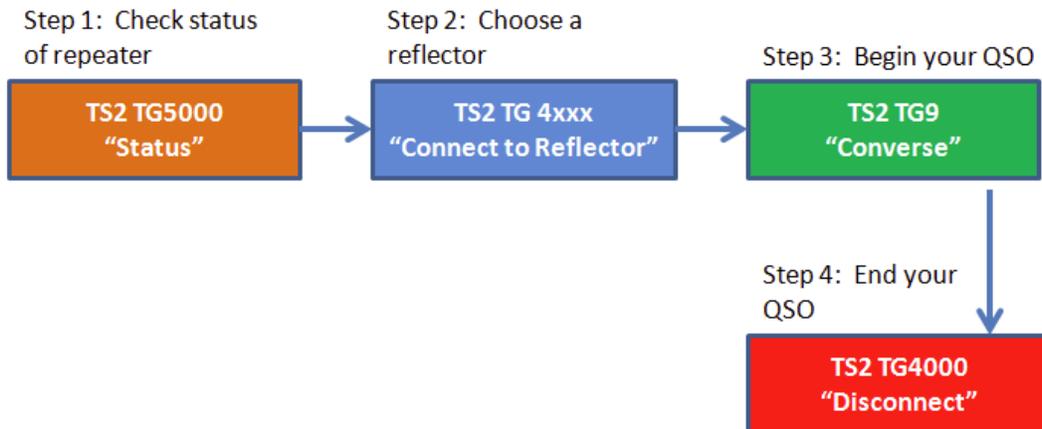
RX timeout (sec): 10

Then select "Save".

You can revert the profile back to profile 1 for normal operation.

You are all done! You can now use the new zone to switch the openSPOT between 'profile 0' (BrandMeister) mode and 'profile 1' (DMR PLUS) mode.

The sequence of channels to select matches this sequence:



You return to "Normal" BrandMeister mode by selecting the "Profile 0" channel and PTT, then change your zone to the 'normal' Zone.