

How to Program Encrypted Channels into the Baofeng DM-32 DMR Radio

Note: This is not necessarily the “best” way to set up your encrypted comms, this is just the simplest and easiest way. Take from it what you will.

Disclaimer: Check all regulations in your region before transmitting (TX). Generally, in **emergency situations**, you are permitted to TX without license.

You Will Need: Baofeng DM-32 DMR Radio, Baofeng Programming Cable, Windows Computer

Step 1: Install Programming Software

- Go to the BaofengRadio.com Downloads Page:
<https://www.baofengradio.com/pages/download>
- Scroll down to the DM section and find the software for the DM-32UV.
- Download & install the program “CPS” on your computer.

Step 2: Connect and Read From Your Radio

- Use your Baofeng programming cable to connect your windows computer to your DM-32 radio.
- Open the CPS software and read the data from your radio. (**Top Menu Bar > Program Dropdown > Read data**)
- Create a COMMS folder and save these settings in that folder as a backup.

(OPTIONAL) Step 3: Recommended Changes to General Settings

- To simplify display, and reduce your light & sound signature, navigate **Public > Option Feature >** and change the following settings:
 - **Alert Tone > Radio Silent > Check Box**
 - **Display > Background Brightness > Set to “1”**
 - **Work Mode A & Work Mode B > Set both to “MR”**
 - **Dual Watch Mode > Set to “Single Mode”**
 - **Other > Disable All LEDs > Check Box**

Step 4: Set Radio ID & Create a Talk Group

- Go to the “Digit” menu and change the following settings:
 - **Digit > DMR ID > Assign unique name & radio ID**
 - Use a consistent naming convention on all radios
 - Example Name: RADIO01
 - Example Radio ID: 9101
 - **Digit > Frequent Contacts > Create group call**
 - Set **Group Call Name** (ex. GROUPCALL1)
 - Set **TG/DMR ID** (ex. 6401)
 - Set **Call Type:** *Select “Group Call”*

Step 5: Create an Encryption Key

- First, generate a random 64-character hexadecimal encryption key (this website does it for you:
<https://www.browserling.com/tools/random-hex>)
- Then, in CPS software, navigate to **Digit > Digital Encrypt Systems** menu
 - Set **Name** (ex. Encrypt1)
 - Set **Type:** *Select AES-256*
 - Set **Encryption Key:** input the unique, random, 64-character encryption key you generated earlier
 - *Click “Ok” to confirm settings.*

Step 6: Set RX Group List

- Go to the **Digit > RX Group List** menu and create or edit RX Group 1
 - Set **Name** (ex. RX Group 1)

Step 7: Create & Program an Encrypted Channel

- Navigate to **Public > Channel** menu, create a channel (or edit an existing channel) and update the following settings:
 - **Set RX Frequency & TX Frequency**
 - Select one frequency for both
 - Example: 422.5000, 431.7250, 144.9500, 146.3250
 - **Set TX Power**
 - Recommend set to **Low** as default & only boost to Medium or High when not reaching contact
 - **Set TX Contact**
 - This is your Group Call, select the one you created earlier (ex. GROUPCALL1)
 - **Set RX Group List**
 - Select the RX Group List you created earlier (ex. RX Group 1)
 - **Set Color Code**
 - Any code works as long as it is the same for all radios in your fleet
 - *Check the Box* labeled **Encryption**
 - **Set Encryption ID**
 - Select the Encryption Key you created earlier (ex. Encrypt1)
 - **Set DMR ID**
 - This should already be the radio “name” you created earlier. If it isn’t, select your radio “name” from the dropdown.
 - *Click “Ok” to confirm settings.*

Step 8: Save Settings to Computer & Write to Radio

- Save the settings file to your COMMS folder using the radio’s “name”
- Write to radio **Top Menu Bar > Program Dropdown > Write Data**

Step 9: Repeat for all Radios in Your Fleet

- For each radio remaining in your fleet...
 - Open your saved settings file in the CPS program (it should be saved in your COMMS folder as the “name” of your first radio, i.e. RADIO01, or whatever naming convention you chose)
 - Navigate to **Digit > DMR ID** menu
 - Update **Radio Name & DMR ID** according to convention you set earlier
 - Ex. RADIO01, RADIO02, RADIO03, etc. and 9101, 9102, 9103, etc.
 - Save new settings file under this NEW radio’s name. (ex. RADIO02)
 - Write the settings to this radio.
- Repeat until all radios are programmed.

Step 10: TEST YOUR ENCRYPTED CHANNEL

TROUBLESHOOT: Encryption not enabled?

- If the encryption “shield” icon is missing from the display on your channel, then the encryption key is NOT YET ACTIVE. Don’t worry, just follow these easy steps:
- Using the physical radio, click the “Menu/Ok button” to access the menu.
 - Navigate **Setting > (2) Channel Set > (13) Digital Encrypt > (2) Encrypt List**
 - Select the Encryption Key you created earlier (ex. Encrypt1) from the menu
- Exit the menu, navigate to the home screen, and confirm the “shield” icon is present on the channel you created, signaling that the Encryption Key is active.