

The Ins and Outs of the Kenwood TM-D710



RMHAM University
Tech Talks

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Your Host



Chris Keller, K0SWE. Active in RMHAM and Colorado ARES R1D6, as well as software development for amateur radio



Tech Talk Format

- New format, so bear with us
 - 30 minutes of prepared material
 - 30 minutes of audience Q&A
 - Not necessarily in that order, ask questions throughout
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- Today's talk: covering as many features as quickly as possible
 - Hope to spark research ideas and maybe go deep on a couple of topics



The Basics



Kenwood TM-D710 (A, E, GA, GE)



A/E: American or European market; G: built-in GPS

Original released in 2007; G models in 2013

Expensive, but it's rock solid and practically the gold standard for APRS and AX-25 packet radio in a mobile unit



Controls and Must-Have Settings

- Knobs
 - Soft Keys
 - [KEY] and [F]
 - Main Menu
-
- Change Mic Call/A to [ENTER] (Menu 911)
 - Set time zone (Menu 927)

Demo note: Full Factory Reset

On the G model, time will set automatically from GPS



Programming



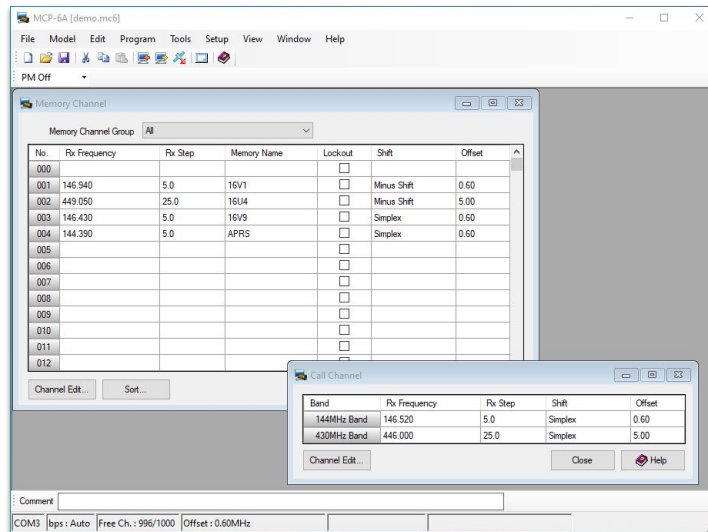


Front Panel Programming

- Repeater with tone via VFO
 - Transmit power
 - Store memory
 - Memory name (Menu 200)
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- Swapping between VFO and MR modes

Transmit power is 50W (H), 10W (M) or 5W (L)

MCP-6A Programming



Requires PG-5G or equivalent cable. Freely available, Windows only, somewhat weak import/export. Good for getting at every little corner of the radio, including firmware updates.

CHIRP Programming



The screenshot shows the CHIRP software window. At the top, there's a menu bar (File, Edit, View, Radio, Help) and a toolbar. Below that, there are tabs for "Generic CSV: Chirp Band Plan V7.3.csv" and "Kenwood TM-D710G_CloneMode: tmd710-demo.img". The main area is divided into "Memories" and "Properties" sections. The "Memories" section has a "Settings" tab selected, showing a table of memory slots. The "Properties" section has a "Show Empty" button. At the bottom, a status bar indicates "[0] Completed Getting radio settings (idle)".

| Loc | Frequency | Name | Tone Mode | Tone | ToneSqt | DTCS Code | DTCS Rx Code | Cross Mode | Duplex | Offset | Mode | Tune Step | Skip |
|-----|------------|------|-----------|-------|---------|-----------|--------------|------------|--------|----------|------|-----------|------|
| 0 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 1 | 146.940000 | 16V1 | Tone | 103.5 | | | | | - | 0.600000 | FM | 5.0 | |
| 2 | 449.050000 | 16U4 | Tone | 107.2 | | | | | - | 5.000000 | FM | 25.0 | |
| 3 | 146.430000 | 16V9 | (None) | | | | | | (None) | | FM | 5.0 | |
| 4 | 144.390000 | APRS | (None) | | | | | | (None) | | FM | 5.0 | S |
| 5 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 6 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 7 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 8 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 9 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 10 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 11 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 12 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 13 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 14 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 15 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 16 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 17 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 18 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 19 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |
| 20 | 0.000000 | | (None) | | | | | | (None) | | FM | 5.0 | |

Requires PG-5G or equivalent cable. Free and open source software. Windows, Mac, and Linux native. Dozens of manufacturers and [hundreds of radios](#). Import/export and copy/paste between radios. Less customized per radio.



Scanning





Basic Scanning

- VFO scanning
 - Memory scanning
 - Memory lockout (Menu 202)
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- But what if I want to scan fewer memories?

Hold [VFO] to start VFO scan, hold [MR] to start memory scan

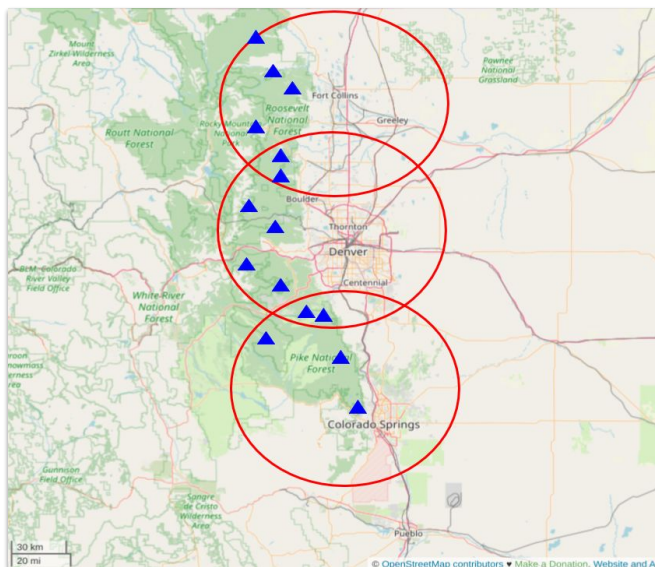


Memory Groups and Group Scanning

- The radio's 1000 memories are divided into
10 groups of 100 memories
 - 000-099
 - 100-199
 - 200-299
 - Etc.
- Memory Group Link
- Use cases?

Hold down VFO knob to start scanning current group

Channel Groups Use Case



Use 100-199 for Ft Collins, 200-299 for Denver, 300-399 for Colorado Springs.

Can see Almagre from Denver and CoSp? Add duplicate channels in groups 2 and 3!



Programmable Memories





Programmable Memories (PM)

- Store and recall most settings *except* channels
- Five PM slots plus OFF
- Use cases:
 - Different users
 - Different operating locations (desk vs mobile)
 - Different times of day



APRS





Basic APRS

- Automatic Packet Reporting System
- US APRS frequency: 144.390 MHz
- Set Callsign and SSID
- Check Path
- Beacon Settings (TX Algorithm)
- Notification Settings



Crossband Repeater



Crossband Repeater



- Only works U/V, will not do U/U or V/V
- Turn down your power!
- Set your morse ID!