PROGRAMMING TOOLKIT

MOTOTRBO CPS 2.0 Programming Starter Kit

TWRG

A practical preflight, backup, change-control, and fleet handoff system for teams programming compatible MOTOTRBO radios.

PRINTABLE	FIELD-READY	TEAM-FRIENDLY

Use this toolkit alongside the manufacturer documentation for your exact radio model and your organization’s authorized frequencies.

1. Safe programming preflight

Complete this page before connecting or changing a radio.

- ☐ Confirm the exact radio model and that MOTOTRBO CPS 2.0 supports it.
- ☐ Use a Windows computer with current CPS 2.0 software and the correct Motorola-compatible programming cable.
- ☐ Connect the cable directly to the computer when practical. Avoid multiport USB hubs during programming.
- ☐ Charge the radio battery and keep radio/computer power stable for the entire read or write.
- ☐ Close other radio-management tools that may compete for the USB connection.
- ☐ Record the operator, date, radio ID, serial number, and intended change below.
- ☐ Read the radio first. Save an untouched backup before making edits.
- ☐ Confirm every programmed frequency and operating parameter is authorized for your organization.

Operator / date	
Radio model	
Serial number	
Radio ID / alias	
Current codeplug file	
Requested change	
Approver	

STOP CONDITION

If CPS cannot reliably read the radio, the radio loses power, the cable is loose, or the model/firmware is not recognized, stop. Do not attempt a write until the connection and compatibility issue is resolved.

2. Backup and naming standard

A predictable file name turns a codeplug into a recoverable business record.

Recommended file name

EXAMPLE

CP100d-Warehouse-Radio07-SN123456789-2026-08-26-BEFORE.rdt

Element	What to record	Example
Model	Exact model family	CP100d
Location / fleet	Short shared label	Warehouse
Radio	Unit number or alias	Radio07
Serial	Manufacturer serial	SN123456789
Date	ISO format	2026-08-26
State	BEFORE or AFTER	BEFORE

- ☐ Store the untouched BEFORE file in a read-only backup location.
- ☐ Save working edits as a new file—never overwrite the only known-good backup.
- ☐ After validation, save an AFTER file and a short change note.
- ☐ Keep the CPS version and radio firmware information with the change record.

Backup folder	
BEFORE filename	
Working filename	
AFTER filename	
CPS version	
Firmware version	

3. Change-control worksheet

Plan the change before editing. Apply one logical batch at a time so problems are easier to isolate.

Change area	Current setting	Proposed setting	Business reason	Verified
Channel / zone				□
Frequency				□
Color code / tone				□
Power / bandwidth				□
Scan list				□
Button behavior				□
Radio ID / alias				□
Other				□

LICENSE CHECK

Programming software can accept values that your organization is not authorized to use. Match frequencies and operating parameters to your license and documented system plan before writing the radio.

Write sequence

- □ Review edits against this worksheet.
- □ Write the radio without disturbing cable or power.
- □ Wait for CPS to confirm completion before disconnecting.
- □ Power-cycle the radio if instructed by the software.
- □ Read the radio again and compare critical settings.

4. Validation and fleet rollout

Test one pilot radio before cloning or repeating a configuration across a fleet.

- ☐ Radio powers on normally and shows/announces the expected channel.
- ☐ Transmit and receive work with a known-good radio on every changed channel.
- ☐ Audio is clear; accessories, PTT, scan, and buttons behave as intended.
- ☐ A practical range test passes in the actual operating environment.
- ☐ Emergency or safety workflows are tested under your organization’s procedures.
- ☐ The AFTER codeplug and change record are stored before fleet rollout.
- ☐ The fleet rollout list identifies every radio changed and any exception.

Unit / serial	Read backup	Written	Functional test	Operator / date
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

NEED A SECOND SET OF EYES?

TWRG can help identify compatible cables, batteries, accessories, and replacement radios. For system design, licensing, or programming services, contact a qualified radio professional.

5. Troubleshooting decision guide

Symptom	Check first	Next safe action
Radio not detected	Power, cable seating, direct USB connection	Try a known-good compatible cable/port; restart CPS.
Read fails	Model support, connection stability, competing software	Stop writes; capture the error and verify compatibility.
Write interrupted	Do not repeatedly power-cycle or force writes	Follow Motorola recovery guidance or qualified support.
Radios cannot talk	Same channel, frequency, color code/tone, bandwidth	Compare against known-good codeplug and license plan.
Poor range/audio	Battery, antenna, power setting, accessory seating	Test without accessory and compare to known-good radio.

Authoritative references

Motorola Solutions: MOTOTRBO CPS 2.0 Online Help User Guide; CPS/RM USB connection best practices; Business Radio software and support pages. Always use the documentation for your current CPS release and exact radio model.

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