

Alinco DJ-X100T

A multimode digital communications receiver

Flathead Valley Amateur Radio Club

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Why this receiver matters

- One handheld can monitor several incompatible voice formats
- Analog, amateur digital, commercial digital and selected data
- Useful for listening, troubleshooting and RF exploration

Receiver, not transceiver

- No RF transmit capability
- Cannot check into a repeater or transmit on simplex
- Monitoring is distinct from joining a digital network

RF coverage at a glance

- Communications coverage: 30–470 MHz
- Broadcast FM: 76–108 MHz (WFM only)
- Cellular frequencies blocked in U.S. model
- 50 Ω SMA antenna connector

Supported analog modes

- AM and narrow AM (NAM)
- FM and narrow FM (NFM)
- Wide FM broadcast reception
- CTCSS / DCS decoding

Supported digital voice

- DMR Tier I / II — receives TS1 and TS2; AUTO selects either slot
- Color Code: OFF (all), or 0–15
- Group Code: All stations, or a specific group ID
- Time Slot: AUTO, 1, or 2
- Also supports D-STAR voice, C4FM DN, NXDN, dPMR and DCR

DMR monitoring

- DMR uses two alternating time slots on one 12.5 kHz channel
- A talkgroup identifies the intended conversation/community
- TS1 and TS2 can carry different talkgroups and conversations
- Knowing talkgroup + slot helps identify traffic and filter monitoring
- AUTO receives either slot; it does not play both simultaneously
- No trunk tracking or encrypted-audio decoding

D-STAR and C4FM

- D-STAR: compatible DV digital voice (AMBE speech) on amateur channels
- D-STAR voice reception only; no transmit, routing or data-service participation
- C4FM Fusion DN = Digital Narrow: voice plus digital data in 12.5 kHz
- Fusion VW (Voice Wide) is NOT supported
- Fusion full-rate/high-speed data (DW) is NOT supported
- Analog FM can be monitored separately using FM/NFM modes

NXDN, dPMR and DCR

- Additional land-mobile digital modes
- Interesting for RF monitoring and technical comparison
- Legality and privacy requirements still apply

Analog and digital signal path

- Antenna → RF/IF stages → DSP demodulation → speaker
- Triple-conversion superheterodyne for AM/FM/digital/data
- Dedicated WFM broadcast reception architecture

Scanning capabilities

- VFO scanning and memory scanning
- 999 memory channels; up to 26 banks
- 50 programmable scan pairs and 20 scan links
- Priority scan and timed skip options
- Frequency counter mode



GPS-aware reception

- Built-in GNSS receiver
- Store position information with memory entries
- GPS memory scanning selects nearby stored stations
- Position/distance display for supported signals

AIS: vessels on VHF

- AIS = Automatic Identification System
- Marine VHF data broadcasts, commonly on 161.975 and 162.025 MHz
- Displays vessel identification, position and movement when decoded
- Reception depends on proximity and line of sight to vessels



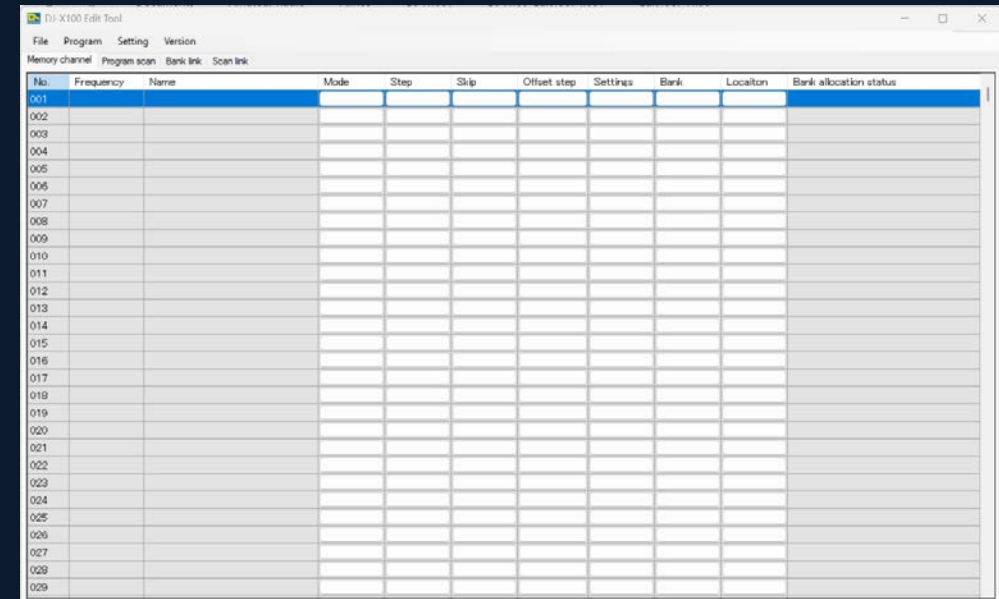
ACARS and other data

- ACARS = Aircraft Communications Addressing and Reporting System
- Aircraft-ground digital messaging for airline operations
- Used for dispatch, flight status, weather and operational reports
- DJ-X100T can display supported ACARS messages on VHF channels
- Selected FSK data reception; not a universal protocol decoder



Programming and computer connection

- USB-C for charging and PC connection
- Alinco memory editing utility “DJ-X100 Edit Tool”
- Plan banks, labels, frequencies and mode settings
- Keep a backup of the programmed configuration
- Change foreground and background colors to your liking



The screenshot shows the 'DJ-X100 Edit Tool' window. It has a menu bar with 'File', 'Program', 'Setting', and 'Version'. Below the menu bar are tabs for 'Memory channel', 'Program scan', 'Bank link', and 'Scan link'. The main area is a table with the following columns: 'No.', 'Frequency', 'Name', 'Mode', 'Step', 'Skip', 'Offset step', 'Settings', 'Bank', 'Location', and 'Bank allocation status'. The table contains 30 rows, numbered 001 to 029. The first row (001) is highlighted in blue.

No.	Frequency	Name	Mode	Step	Skip	Offset step	Settings	Bank	Location	Bank allocation status
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002										
003										
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009										
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Hardware and battery

- 2.0-inch 320 × 240 color TFT display
- 3,120 mAh Li-ion pack
- Manufacturer indicative battery life: up to ~16 hours in stated standby cycle
- Approximately 9.17 ounces with battery and antenna

What it does not do

- No transmission
- No general-purpose P25 decoding listed
- No promised trunk tracking
- No decryption
- Not a substitute for an SDR waterfall or spectrum analyzer

QST REVIEW | STANDOUT FEATURES

- Analog AM/FM plus DMR, D-STAR, C4FM (DN), NXDN and dPMR in one receiver
- Built-in AIS vessel tracking and ACARS aircraft-message decoding
- VFO tuning; 999 memories in 26 banks; GPS-based and shift scanning
- Automatically identifies DMR slot/color code and NXDN RAN codes
- USB-C interface, 12 kHz IF output, and free Windows Edit Tool
- Reviewer praised VHF/airband reception and digital voice decoding



QST REVIEW | PERFORMANCE & LIMITATIONS

- ARRL Lab FM sensitivity: 0.16 μV at 52 MHz; 0.18 μV at 146/223 MHz
- At 440 MHz, measured FM sensitivity was 0.20 μV
- Reviewer observed 12–14 hours battery life; GPS roughly halved it
- Receive coverage: 30–470 MHz, plus 76–108 MHz broadcast FM
- IP67-rated; no P25, SSB, HF, Bluetooth or reception above 470 MHz
- Speaker could be louder outdoors; a tuned antenna can improve reception

Is it the right tool?

- Strong fit: multimode conventional listening and RF exploration
- Not suitable: transmitting, P25 monitoring or trunked-system following
- An RF 'sniffing' tool for the amateur radio operator's tool box
- \$459.99 at Ham Radio Outlet

References and discussion

- Alinco DJ-X100T/E product page: alinco.com/item/dj-x100t-e/
- Official manual: alinco.com/Products/ham/ht/DJ-X100TE/DJ-X100TEinst.pdf
- Software/firmware: alinco.com/download-article/
- Questions and local monitoring experiences?
- September 2026 ARRL QST Review