AMATEUR RADIO · AUGUST 25, 2026

Amateur Radio Digital Community: The State of Play as of Late August 2026

A reference rundown of the amateur radio digital scene through 25 August 2026: IP400's OFDM-AB/AMNC relaunch, JS8x and WSJT-X developments, M17/LinHT and MMDVM-IQ progress, FreeDV's FlexRadio integration, RadioID verification, new digital-capable radios, mesh networking shifts, and the autumn event calendar.

15 min read · 17 sources

2026 SDR digital modes digital voice mesh networking open source packet radio

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The amateur radio digital community has just had its most consequential few weeks in years. The headline is the August reveal of **IP400 reborn around a new modulation called OFDM-AB** and a dedicated controller box that turns ordinary FM radios into fast mesh nodes — but alongside it sit a brand-new HF messaging mode from the JS8Call maintainer, a fresh WSJT-X generation aimed at moonbounce, steady progress on open-source digital voice hardware, and a wave of housekeeping that will actually affect operators' stations. This document summarizes what changed between roughly mid-June and 25 August 2026, with versions, dates and figures as published.

57,176 bps	+3 dB	16 Oct 2026	1 Jul 2026
Peak OFDM-AB rate	JS8x vs JS8 claim	ZRDC 2026	RadioID annual verification
on Tait-class data radios	simulation only, unverified on air	San Ramon, CA	began

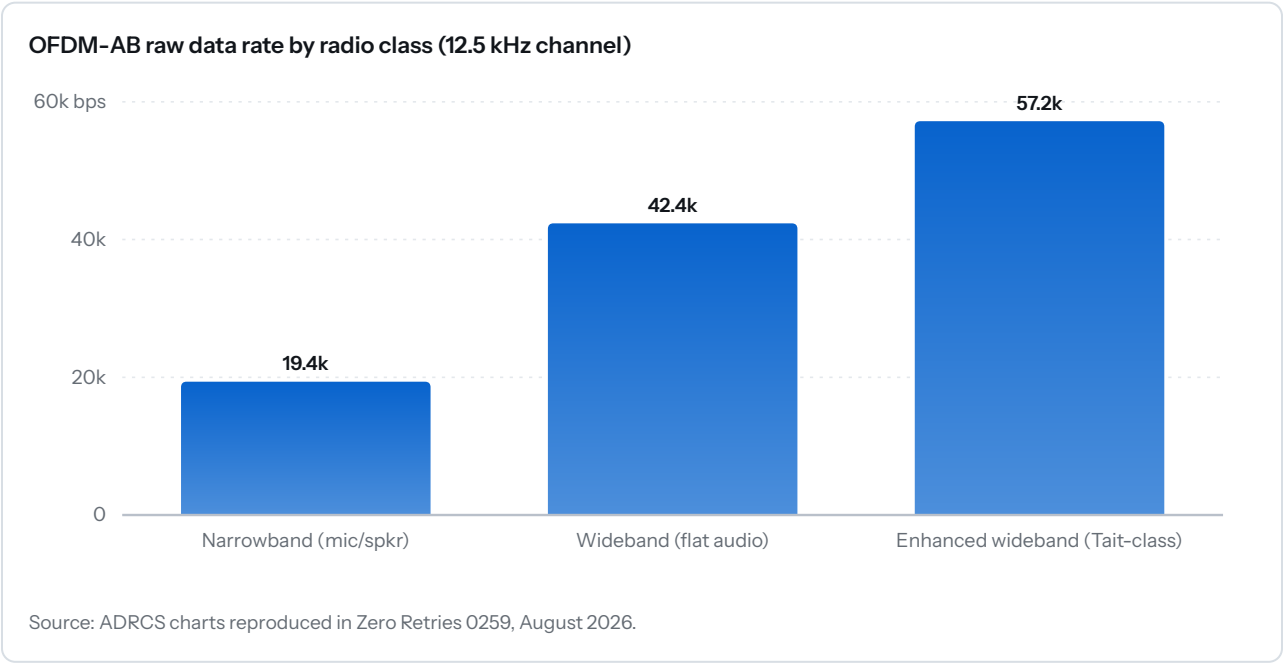
The big story: IP400 refactored around OFDM-AB and the AMNC

The dominant item of the summer was Steve Stroh N8GNJ's exclusive in Zero Retries 0259 (published 7–8 August 2026) on the refactored **IP400** project from Alberta Digital Radio Communications Society (ADRCS)[1]. The original 2025 concept — a purpose-built FSK radio targeting **100 kbps minimum** on 70 cm — produced the "Mini Node" (about one hundred units distributed), which proved the mesh concept but stalled in practice: usable terrestrial nodes needed an external amplifier to reach roughly 25 W, and early experimenters hit the "lone node problem" of having nobody else to talk to.

The August 2026 relaunch changes the economics completely. Instead of requiring special radios, the new **OFDM-AB** (Orthogonal Frequency Division Multiplexing – Audio Band) modulation runs *in the audio path* of any conventional VHF/UHF FM radio — through the 9600-bps flat-audio connector where available, or through microphone and speaker connections otherwise. Networks become possible on 6 m, 2 m, 1.25 m, 70 cm and even 10 m, within a normal **12.5 kHz** FM channel.

The hardware anchor is the **Advanced Mesh Network Controller (AMNC)**, a board built around an Efinix Trion FPGA ("lightly utilized", per Stroh) that generates the OFDM-AB waveform without host-computer latency. It operates three ways: standalone over USB-C speaking the familiar **KISS protocol**; as a Raspberry Pi 3 B+ HAT inheriting Ethernet, Wi-Fi and a full TCP/IP stack; or bolted into an existing FM repeater, where it adds AllStarLink and a parallel data service — voice users keep working because the repeater transmits CTCSS on voice only, and the AMNC defers data when voice collides. It supports two radios at once, enabling cross-band gateways.

Published performance tiers (full-quieting channel, QAM-256)[1]:



Source: ADRCS charts reproduced in Zero Retries 0259, August 2026.

KEY FINDING

These are **raw** rates before Forward Error Correction overhead — real throughput will be lower. And they represent 57% of the original 100 kbps goal, but inside one-twelfth of the originally proposed 100 kHz bandwidth.

Mesh routing is designed in rather than bolted on: every transmission header carries the station's maximum data rate and routing data, each receiver caches what it hears into a local mesh table, and a sender only needs the destination callsign. The Unified Firmware Platform runs identically on Mini Nodes and the AMNC, so early adopters are not orphaned.

Three caveats belong in any honest summary. First, Stroh discloses he had advance access and is an honoured ADRCS member, though not part of the development team. Second, **some described features are not yet implemented** — the development roadmap runs through the first half of 2027, with the AMNC reaching full production in **Q4 2026** and pricing to be announced later in 2026. Third, the rates assume full quieting; a noisy channel steps down the QAM order and the speed accordingly. The firmware, mesh stack and OFDM-AB specification are open source at `github.com/adrcs/ip400`; the AMNC hardware design itself is private.

CAUTION

OFDM-AB and the AMNC are pre-production. Nothing in this section should be treated as shippable capability until ADRCS publishes pricing and the first production units reach testers — planned demonstrations at ZRDC 2026 in October will be the first public proof points.

Stroh frames the system as the "missing middle" of amateur networking — between Mercury (an OFDM HF modem already being tested on The Packet Radio Forwarding Network) on long haul and AREDN on microwave — and contrasts it pointedly with new flagship radios: the Icom ID-5200 ships with **1200 bps** APRS and the Kenwood TM-D750 with **9600 bps**, at prices near $1000, while an AMNC plus a flat-audio mobile such as the Yaesu FTM-150R (~$360) delivers orders of magnitude more for roughly half the cost[1].

HF messaging: JS8x unveiled, WSJT-X lines, packet revival

The most intriguing software announcement came from Jordan Sherer KN4CRD, maintainer of JS8Call, who revealed **JS8x** on 3 August 2026 in the JS8Call-improved GitHub discussions[5]. His own description is worth quoting at length because every claim is currently unproven on air:

> *It's been a long time coming, but I'm happy to say that I'm wrapping up research and development on a new digital mode based on what I've learned with JS8 over the years. This new mode is showing to have **3 dB (!) advantage over JS8 during simulation and local tests**.*

The technical highlights from his post: streaming frames carrying **64–256 bit** binary payloads; streaming synchronization requiring **no clock or timing accuracy**; configurable bandwidth and baud "similar to configurability like VARA/Olivia/Contestia"; retention of FSK so fading and multipath behaviour stays predictable; modern forward error correction with fewer false decodes; and — notably — **no code from WSJT-X or FT8**, freeing the project from GPL restrictions. It builds cross-platform from one codebase including iOS, Android and web browsers; Sherer demonstrated it running in a browser on an iPad. A paper is in progress and on-air trials were being organized, though fellow maintainer Chris AC9KH noted late summer is a poor season to recruit testers. Treat the 3 dB figure as a simulation claim until ionospheric results exist.

On the WSJT-X side there are now two tracks. The official project's GitHub mirror shipped **WSJT-X 3.0.1** on 3 May and **3.0.2** on 19 June 2026 — the stable line's first releases since the move to GitHub[7]. Meanwhile Uwe Risse DG2YCB's **WSJT-X Improved** fork jumped to the **3.2 series**, with build 260818 released 19 August[6]. Its changelog centres on EME (moonbounce): a unified colour scheme for callsign overlays across WSJT-X, QMAP and MAP65 with clickable overlays; an **extended liveCQ protocol** built specifically for Lance W7GJ's upcoming 6 m EME DXpedition as H44GJ, which spots every received Q65 message to a server at livecq.n6nu.org so the expedition station can see who can hear it, in near real time; and **QMAP v1.0** with click-to-work, multiple instances and a band-map window. The Windows installer was pulling about **4,570 downloads/week** within days of release. The fork's earlier RC line also carried the new SuperFox verification system shared with upstream.

Underneath the headline modes, the packet world kept rebuilding itself: the Mercury HF OFDM modem is being hardened against feedback from real use on The Packet Radio Forwarding Network[1]; Zero Retries 0260 ran a follow-up on **New Packet Radio – Next Generation (NPR-NG)** with its developer DO5DSH[2]; the **NA6D OpenTNC** became available; **WhatsPac** brought chat channels and private messages to packet; and N3BKV's CBBS_PI recreated the dial-up BBS experience on a Raspberry Pi[1]. On the receive-only side, KK4SW's `cw-dit` skims Morse across an SDR's whole sampled bandwidth in Rust[17].

SOFTWARE	VERSION	DATE	WHAT CHANGED
WSJT-X (official)	3.0.2	19 Jun 2026	Stable-line maintenance release
WSJT-X Improved	3.2.0 (260818)	19 Aug 2026	EME overlays, liveCQ for H44GJ, QMAP v1.0
JS8x	pre-alpha	announced 3 Aug 2026	New mode, +3 dB sim claim, on-air tests pending
Mercury (HF OFDM)	rolling	active Aug 2026	Iterating against TPRFN field feedback
Pat (Winlink client)	1.0.0	Apr 2026	First stable release

Open-source digital voice: M17/LinHT, MMDVM-IQ, FreeDV

August was busy on the open digital voice front, on three fronts at once.

M17 / OpenRTX / LinHT. The M17 Project's August posts [4] confirm the **Retevis C62 OpenRTX port** is progressing, with the platform getting special treatment because it serves both as an OpenRTX target (flash the radio, get M17, no hardware modification) and as the donor carrier for the LinHT board. One practical gotcha matters to anyone flashing a C62 now: LISTENAI's `cskburn` flashing tool **version 1.31.0 has a bug** in its argument parser that breaks setting start/stop addresses for reads. A pull request is pending; the project recommends using SP5WWP's fork or pinning **v1.25.0**. Separately, the CSI CS7000-M17-Plus running OpenRTX was showcased at **DEFCON 34** by Arthur N4TRQ in early August. The LinHT Linux-based SDR handheld remains the ambitious track: the June Rev B status report records what worked (i.MX93 module booting Linux in a handheld body, GNU Radio flowgraphs, SX1255 IQ front end, M17 decoding, TETRA receive) and what broke — most visibly the Quectel LG77L GNSS module failing to get a fix because the antenna path resonates roughly **200 MHz away from L1**, with a 0.75 pF series-capacitor stopgap measured before Friedrichshafen. Rev C planning is underway, and a Yocto image with basic analog FM/M17 "batteries included" is the promised lowering of the entry bar.

MMDVM-IQ. Jonathan Naylor G4KLX, author of the original MMDVM, released **MMDVM-IQ** — a next-generation firmware that abandons chips like the ADF7021 in favour of I/Q hardware built around the **Semtech SX1255** 70 cm duplex transceiver, accessed via SoapySDR on a Raspberry Pi (Pi 4 recommended) [1]. Because modulation becomes software, the first release supports **D-Star, DMR, System Fusion, P25 phase 1, NXDN, POCSAG and FM** — one mode more than the standard hotspot — and Naylor notes "this new hardware allows us to use any modulation method that we want to." Stroh's reaction captures the community's mixed feelings: impressive, but M17 is not yet among the supported modes.

FreeDV. Version **2.3.0** arrived in May with the ecosystem's most requested integration: a Docker container that loads the FreeDV waveform directly onto **Flex 8000/Aurora** radios via SmartSDR 4.2.18, exposing FDVU/FDVL modes on the transmit slice with no DAX or CAT setup [8]. **2.3.1** followed quickly with improved Flex waveform audio quality. At Hamvention the booth demonstrated RADE (Radio Autoencoder) live over remote radios, and the project reported the three things that drive adoption — perceived voice quality, robustness versus SSB, and ease of setup — as exactly where RADE is winning. A crowdsourced **RADE V2 test campaign** was announced as imminent, with draft testing instructions already in the radae repository. FreeDV's pitch remains unique in the space: 100% open source including the speech codec, funded by an ARDC grant [9]. Maintainer Mooneer Salem K6AQ speaks on the project at ZRDC 2026 [3].

DMR housekeeping: RadioID annual verification begins

Less glamorous but operationally significant: **RadioID.net began annual verification of DMR IDs on 1 July 2026** [10]. Citing finite ID space and expected regional shortages, the database now emails each account holder on the anniversary of account creation asking them to confirm their ID(s) are still needed and their details accurate. No confirmation means temporary deactivation; continued silence

means the ID is deleted and made available for reassignment. This lands on top of the ongoing purge of improperly formatted IDs, whose deadlines are easy to miss:

KEY FINDING

Legacy DMR ID deadlines: 7-digit personal IDs starting with “1” stopped working on Brandmeister after **1 January 2026**; 6-digit repeater IDs starting with “1” have no fixed date but are being purged when offline, with sysops urged to migrate to 31xxxx; a one-click “Convert to 3n” tool was added to the RadioID dashboard in late January.

Any operator with an old-format ID who has been off the air for a while should check whether their number still exists before programming a radio.

New digital-capable hardware

Two long-awaited flagship mobiles frame how slowly the commercial side is moving on data.

The **Icom ID-5200A/E**, announced May 2026 for summer launch as the ID-5100’s successor, brings a 4.3-inch touchscreen with waterfall, independent A/B-band controls, built-in Wi-Fi with access-point capability, Terminal Mode and Access Point Mode, DV Repeater Monitor, image transmission, true simultaneous DV/DV dual receive, and airband receive — with **APRS deferred to a future firmware update** [11]. Pricing and regional availability were not finalized at announcement.

The **Kenwood TM-D750A** finally cleared FCC authorization on **23 January 2026** after years of community doubt, and was demonstrated powered on at Hamvention in May [12]. Early documentation shows a tri-band mobile with APRS **including digipeater function**, D-STAR support, integrated GPS, waterfall display, Bluetooth and dual-band Wi-Fi, USB-C on both body and control head, twin microSD slots, and roughly 50 W on VHF/UHF with a lower high-power rating on 220 MHz. Community reporting continues to treat its exact release timing as unsettled.

In the open-hardware column, **sBitx 5.4** (July) rebuilt the IQ signal pipeline, added narrowband FM with squelch and CTCSS — opening 10-meter FM — plus CESSB speech processing, an SWR sweep tool, and IQ streaming over Wi-Fi/Ethernet using HPSDR Protocol 1 [1]. Stroh immediately noted the obvious combo: sBitx on 10 m FM paired with an IP400 AMNC. The **QuadRF** four-channel phased-array board closed an “overwhelmingly successful” Crowd Supply campaign, with monopulse-style dish tracking demonstrated and delivery expected late 2026 or early 2027 [1]. And Raspberry Pi’s new **10″ Touch Display 2** ($80, 1200×1920, ten-finger touch, Pi 5/Compute Module only) is an obvious shack-console building block [1].

HARDWARE	STATUS (LATE AUG 2026)	DIGITAL RELEVANCE
Icom ID-5200A/E	Announced May 2026, summer launch	D-STAR AP/Terminal modes; APRS via future firmware
Kenwood TM-D750A	FCC granted 23 Jan 2026	Tri-band, APRS digipeater + D-STAR
sBitx v5.4	Released Jul 2026	Open-source HF, adds FM + HPSDR IQ streaming
QuadRF	Funded, ships late 2026/early 2027	Four-channel phased array for experimenters
AMNC (IP400)	Production Q4 2026	OFDM-AB modem/mesh controller

Mesh networking: AREDN, MeshCore and the AX.25 debate

AREDN shipped production release **4.26.7.0** on 11 July: a rebase onto OpenWRT 25.12.5 (new `apk` package manager — side-loaded .ipk packages are dropped), faster tunnel changes without restarting the network stack, improved 802.11ah HaLow drivers, MediaTek Wi-Fi 6 AX support, and first-time support for Zyxel's outdoor-rated NWA55AXE[13]. More consequential is what is coming: nightly builds add **simultaneous mesh operation on multiple radios** — a long-requested feature — and address-free tunnel/xlink creation.

> CAUTION
>
> AREDN's multi-radio nightlies are explicitly **not backward compatible**: once installed you cannot return to 4.26.7.0 without a fresh install plus backup restore. The dev team's advice is to back up first and upgrade only nodes you can physically reach.

At the LoRa end, MeshCore keeps compounding. Conrad Trautmann N2YCH's August write-up describes the architectural split from Meshtastic: companions transmit to fixed repeaters rather than flooding, messages live for **up to 64 hops** (32 configured in the US Northeast) instead of expiring after seven, and the network is deliberately RF-first — solar-powered repeaters, internet used only for monitoring maps[14]. The Northeast map had grown organically into a dense multi-state mesh by 8 August, with traffic visible live at analyzer.ctmesh.org. He also flags the unresolved regulatory wrinkle: MeshCore encrypts payloads, which sits awkwardly with Part 97's prohibition on message encryption wherever amateur allocations (such as 902–928 MHz, secondary) are used. Zero Retries 0260 devoted a full essay to **Meshtastic/MeshCore versus AX.25 packet radio**, arguing amateur networks too often depend on internet links, and positioning IP400's tiered multi-band meshing as the answer LoRa meshes cannot give[2].

	Meshtastic	vs	MeshCore
Hop limit	7 floods	·	up to 64 (repeater-routed)
Internet bridge	MQTT, easy	·	RF-first, observers only
Encryption	yes	·	yes (Part 97 concern on ham bands)
Typical hardware	LoRa MCU boards	·	same LoRa hardware

Architecture comparison per N2YCH, Q R P e r, August 2026.

Conferences, institutions and the autumn calendar

Zero Retries Digital Conference 2026 takes place **Friday, 16 October 2026** at the Roundhouse Conference Center in San Ramon, California, overlapping day one of Pacificon (separate registrations) [3]. Registration opened 24 July and standard registration closes **30 September**; attendance options are in-person, live Zoom, a paid recording, or a free copy posted after the conference (the page's "after 1/2026" is presumably meant as January 2027). Confirmed speakers include Martin Alcock VE6VH on IP400 — where OFDM-AB demonstrations are planned as a major presentation [1] — Glen Popiel KW5GP on microcontroller communications, Mooneer Salem K6AQ on FreeDV, and Craig Lamparter KM6LYW on DigiPi and packet projects. ARDC and GigaParts are sponsoring, with five Explorer QRZ-1 handhelds as door prizes.

Just passed: the **ARRL National Convention at Huntsville Hamfest, 22–23 August**, whose EmComm track leaned heavily digital (future-proofing ARES, PACE planning, emerging technologies). At its July board meeting the ARRL approved creation of an **Open Source Amateur Radio Competition** — encouraging innovation in software, hardware and open-source development, with STEM outreach goals — expected to launch in **2027** [1]. The same meeting sunset the Technical Standards Committee, folding the Clean Signal Initiative into ARRL Labs, and awarded the 2028 National Convention to Pacificon.

- 23 Jan 2026 — **Kenwood TM-D750A FCC grant**
  Tri-band APRS/D-STAR mobile clears authorization
- 11 Jul 2026 — **AREDN 4.26.7.0**
  OpenWRT 25.12.5 rebase; multi-radio nightlies flagged
- 1 Jul 2026 — **RadioID verification begins**
  Annual confirmation emails; inactive IDs reclaimed
- 3 Aug 2026 — **JS8x announced**
  KN4CRD reveals new mode claiming +3 dB over JS8

7 Aug 2026 **OFDM-AB / IP400 reveal**
Zero Retries 0259 publishes the refactored IP400

19 Aug 2026 **WSJT-X Improved 3.2.0**
EME-focused release with liveCQ and QMAP v1.0

25 Aug 2026 **JAMX01 and BY70-4 launch**
Student satellites with FM digipeater and SSTV, Long March 6C

30 Sep 2026 **ZRDC standard registration closes**
Conference held 16 Oct in San Ramon, CA

Satellite-side, the AMSAT bulletin of 23 August reported the **18 August ISS spacewalk** (US EVA 97, 6 h 23 m) in which Anil Menon and Sophie Adenot KJ5LTN — the first Frenchwoman to walk in space — removed the failed Space-to-Ground antenna; ARISS radios were powered down 17 August for the work and restored 19 August. Student-built **JAMX01** (FM digipeater uplink 145.950 MHz, beacon/SSTV downlink 435.075 MHz) and BY70-4 were set for launch on 25 August from Taiyuan[16]. OrbitDeck for iOS entered public beta, and AMSAT-UK announced Colloquium details.

Steady state: Winlink, VARA and the tooling baseline

Not everything moved, and the static parts matter for planning. The official VARA modem catalogue on the Winlink server has been unchanged since winter: **VARA HF 4.9.0** (7 January), **VARA FM 4.4.0** (31 January), **VARA SAT 4.4.5** (7 January), Chat 1.4.3 (14 February)[15]. VarAC's newest listed release remains V13.2.7 from February 2026. The Winlink client side saw Pat reach its long-awaited **1.0.0** in April, and emergency-coordination usage keeps growing — Ventura County ACS/ARES launches a countywide Winlink training program on 26 August. The practical reading: the proprietary HF messaging stack is stable and dominant, which is precisely why the open-source energy described above — Mercury on HF, OFDM-AB on VHF/UHF, JS8x as a clean-room chat mode — is converging on the same territory from the free side.

Bottom line

Three threads deserve active watching. First, **IP400/OFDM-AB**: if the AMNC ships on schedule in Q4 2026 at a sane price, it is the most credible attempt yet to give VHF/UHF a modern data layer using radios people already own — watch the ZRDC demonstrations in October and ADRCS's repo. Second, **JS8x and RADE V2**: both are promising claims awaiting ionospheric proof; neither should be deployed for anything important yet. Third, the **WSJT-X fork gap** has widened — EME and DXpedition-critical features are landing in Improved 3.2.0 months ahead of upstream.

Action items for station owners: answer the RadioID verification email or lose your DMR ID; pin `cskburn` to 1.25.0 (or use the SP5WWP fork) before flashing a Retevis C62; register for ZRDC before

30 September if going; back up AREDN nodes before touching the multi-radio nightlies. The broader theme of the summer is unmistakable — FPGA- and SDR-based, open-source, mesh-native designs are pulling visibly ahead of the data features vendors ship in $1000 radios.

SOURCES

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https://www.zeroretries.org/p/zero-retries-0259

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https://www.zeroretries.org/p/zero-retries-0260

3 Zero Retries Digital Conference 2026 — official conference page
https://www.zeroretries.org/p/conference

4 M17 Project news feed — C62 OpenRTX port, cskburn bug, DEFCON 34, LinHT
https://m17project.org/

5 JS8x - The Next Generation — Jordan KN4CRD announcement, JS8Call-improved discussion #354
https://github.com/JS8Call-improved/JS8Call-improved/discussions/354

6 WSJT-X Improved 3.2.0 (build 260818) — release files and changelog
https://sourceforge.net/projects/wsjt-x-improved/files/WSJT-X_v3.2.0/

7 WSJT-X official GitHub mirror — releases 3.0.1 and 3.0.2
https://github.com/WSJTX/wsjtx/releases

8 FreeDV May 2026 update — 2.3.0/2.3.1, FlexRadio integration, RADE V2 test campaign
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Researched and written with stealth/ox-alpha, from the sources listed above. Figures are as reported by those sources. Exported November 29, 2026 from https://intel.innerpulse.net/doc/amateur-radio-digital-community-the-state-of-play-as-of-late-august-2026, where the current version lives.