AMATEUR RADIO · NOVEMBER 8, 2026

HF Digital Modes in 2026: FT8's 57% Share, the Active Second Tier and What Remains of RTTY and PSK31

Club Log data for October 2026 puts FT8 at 57% of all logged QSOs and 88% of digital ones; FT4, WSPR, JS8Call and the VARA/VarAC/Winlink family form the active second tier, RTTY survives on contest weekends, PSK31 has collapsed, and JTTY and FreeDV RADE are the modes to watch.

25 min read · 26 sources

2026 FT8 HF digital modes JS8Call RTTY VARA WSJT-X WSPR

CONTENTS

How activity is measured, and what the numbers say 2
FT8: the mode that owns the HF digital segments 3
Where to find it 4
DXpeditions and SuperFox 5
Decoders beyond WSJT-X 5
FT4 and the contest weekends that drive it 5
FT2: the experiment on the speed axis 6
WSPR and the propagation-beacon layer 7
JS8Call: conversation on the FT8 engine 7
Frequencies and etiquette 8
Where JS8Call fits against FT8 and VarAC 8
VARA, VarAC and Winlink: the ARQ family 9
The VARA HF modem 9
VarAC: chat on VARA 9
Winlink: HF email 10
RTTY: dormant on weekdays, enormous on contest weekends 10
JTTY: the WSJT-X team's successor bid 12
PSK31, Olivia and the legacy keyboard modes 13
Olivia: small, but organised 13
The rest of the fldigi family 14
FreeDV RADE: digital voice arrives on HF 14
2026 software timeline: WSJT-X 3.x, JTTY, FT2 and the forks 15
Dial frequency reference, 160–10 m 16
Bottom line 17
Sources 18

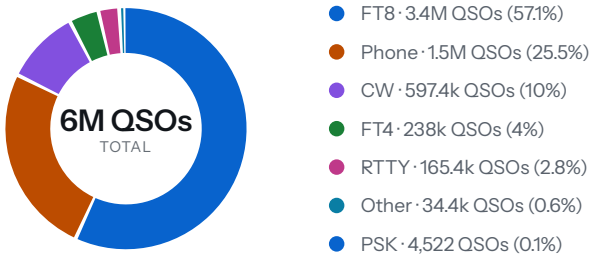
How activity is measured, and what the numbers say

Nobody counts every HF contact, so "most popular" has to be inferred from two very different public datasets. The first is Club Log, which publishes a daily CSV of every QSO uploaded by its users, split into Phone, CW, PSK, RTTY, FT8, FT4 and "Other"[1]. The second is PSK Reporter, which counts *reception reports* — one line each time a monitoring station decodes a signal — broken down by mode over the last two hours[2]. Club Log measures completed contacts between people who keep logs; PSK Reporter measures how much signal is on the air, including beacons that never make a QSO. Both are biased toward operators who run computers and upload data, which is exactly the population that uses digital modes, so treat them as a view of the digital-leaning part of the hobby rather than of all amateurs.

57%	88.5%	3.41M	4,522	4.42M
FT8 share of all Club Log QSOs, Oct 2026	FT8 share of digital-only QSOs, Oct 2026	FT8 QSOs logged, Oct 2026	PSK QSOs logged, Oct 2026	FT8 reception reports per 2 h, PSK Reporter
vs 15% in 2017			vs ~5,000/day in Jan 2011	

Summing the Club Log rows for 1–31 October 2026 gives **5,966,247** uploaded QSOs. FT8 accounts for **3,407,173** of them (57.1%), Phone **1,519,311**, CW **597,414**, FT4 **238,005**, RTTY **165,423**, Other **34,399** and PSK **4,522** [1]. Even that phone figure flatters voice: **940,189** of it fell on 24–25 October, the CQ WW SSB contest weekend, when phone logged 522,834 and 417,355 QSOs on consecutive days. On an ordinary weekday such as Tuesday 20 October the picture is starker: 119,715 FT8 QSOs against 14,106 phone, 8,303 CW, 7,044 FT4, 1,001 Other, 15 RTTY and 14 PSK — FT8 was **79.7%** of everything logged that day[1].

Club Log uploaded QSOs by mode, October 2026



Source: clublog.org/modes.csv, daily rows 1–31 Oct 2026 summed. Phone includes the CQ WW SSB weekend.

Restricting the sum to the five digital columns gives **3,849,522** digital QSOs, of which FT8 is 88.5%, FT4 6.2%, RTTY 4.3%, Other 0.9% and PSK 0.1%. That is the headline answer to the question: on the HF bands as logged in 2026, "digital" and "FT8" are nearly synonymous, with FT4 a distant second and RTTY third only because of two contest weekends.

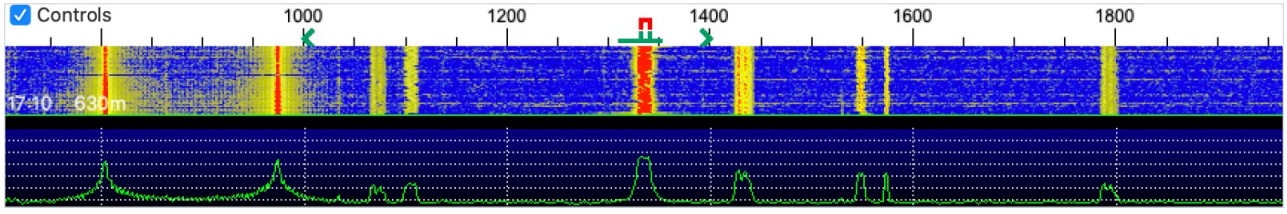
The historical baseline makes the speed of that takeover clear. In January 2018 Club Log's author Michael Wells, G7VJR, reported that FT8 — released in mid-2017 — had already reached **4.8 million of the 32 million** QSOs uploaded in 2017, or 15%, and had overtaken CW and SSB in share by year's end [3]. He warned at the time that Club Log data "may or may not be representative of Amateur Radio activity at large", a caveat that still applies [3].

PSK Reporter tells the same story from the signal side. On the afternoon of 8 November 2026 its "modes over last 2 hours" table showed **FT8 4,424,408** reports, **WSPR 193,973**, **FT4 177,045**, **CW 50,381** and **JS8 13,392** [2]. These are counts across all bands including VHF, and the page could only be read with a text-only fallback, so the figures should be taken as an order-of-magnitude snapshot rather than a precise ranking. What it adds to the Club Log picture is the two modes Club Log cannot see: WSPR, a beacon mode that produces no QSOs at all, and JS8, a conversational mode whose users mostly do not upload to DX logging sites.

> CAUTION
>
> Neither dataset captures Winlink email traffic, VarAC chat sessions or FreeDV voice nets, which do not generate conventional logged QSOs. Those modes are assessed below from their own project data, and their relative size against FT8 cannot be stated with the same confidence.

FT8: the mode that owns the HF digital segments

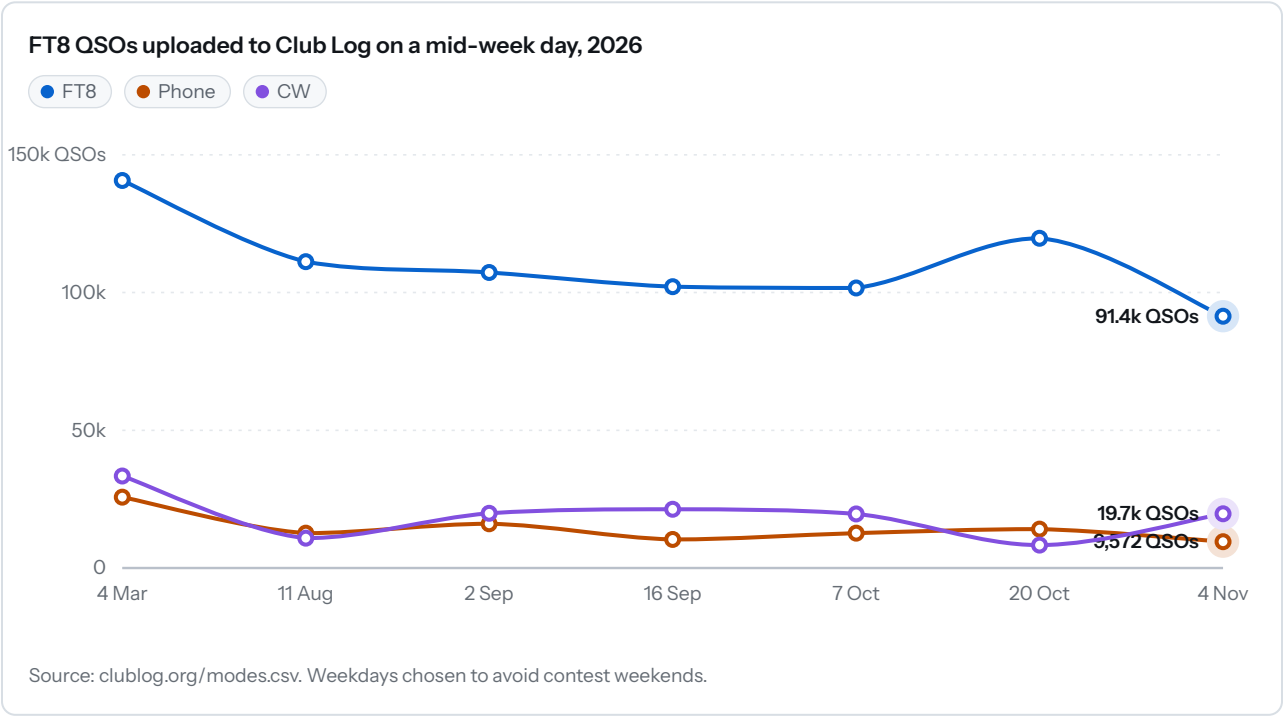
FT8 is named after its designers, Steven Franke, K9AN, and Joe Taylor, K1JT, and the "8" refers to its 8-tone frequency-shift keying. Tones are spaced **6.25 Hz** apart and the whole signal occupies just **50 Hz** [3]. Stations transmit in fixed **15-second** slots, alternating odd and even, so a minimal contact — call signs, signal reports, acknowledgements — takes about a minute [4]. The payoff for accepting that rigid structure is sensitivity: WSJT-X routinely decodes signals well below the audible noise floor, and the project's own front page illustrates this with a 630 m FST4 decode at **−28 dB** that it describes as "inaudible to your ear" [5].



The WSJT-X waterfall: each vertical trace is one station in a ~50 Hz slot, which is why dozens of FT8 QSOs fit inside a single 3 kHz SSB channel. Image: wsjtx.github.io

The ARRL's digital modes reference page is unambiguous about where things stand: "In 2025 it is by far the most popular digital mode for award chasing and working DX", and elsewhere on the same page, "The FT8 watering holes are constantly filled with activity" [6]. Club Log's daily rows bear that out through 2026. Weekday FT8 counts sat between roughly **94,000 and 120,000** QSOs per day from March through October, with weekends and contest days pushing above 150,000 in March and above

130,000 at the end of August and in mid-October[1]. The series below samples one weekday per month to strip out contest effects.



Source: clublog.org/modes.csv. Weekdays chosen to avoid contest weekends.

Why did FT8 win so completely? Taylor himself was careful in 2018 to frame it narrowly:

> *"FT8 and the other modes in WSJT-X are special-purpose modes. They are designed for making reliable, error-free contacts using very weak signals — in particular, signals that may be too weak for the more traditional modes to be usable, or even too weak to hear."*[3]

He added that SSB and CW remain the "general-purpose modes" for ragchewing and emergency work, and that the information exchanged in an FT8 contact "isn't much more than the bare minimum for a valid contact"[3]. That minimum is, however, exactly what DXCC, grid and award chasers need, and a mode that works through a compromised antenna from a noisy suburban lot at 20 W is the one that gets used every evening. Wells' 2018 analysis noted that FT8 drew many operators away from JT65, whose contacts took four times as long[3].

Where to find it

FT8 lives on fixed "watering hole" frequencies that WSJT-X ships as defaults. On HF the USB dial frequencies are **1.840, 3.573, 7.074, 10.136, 14.074, 18.100, 21.074, 24.915 and 28.074 MHz**, with 5.357 MHz on 60 m where permitted[4]. Because a 50 Hz signal fits roughly sixty times into one 3 kHz passband, a single dial frequency carries dozens of simultaneous QSOs; the waterfall above shows what that looks like. Secondary frequencies exist where the main one overflows — 7.071,

14.071 and 21.091 MHz among them — and IARU Region 1 has its own alternates such as 7.056 and 14.090 MHz [4].

DXpeditions and SuperFox

For rare-entity operations, WSJT-X provides Fox/Hound mode, in which one "Fox" station works several "Hounds" at once. The 2024 Jarvis Island (N5J) operation was the first to use the newer **SuperFox** variant, which spreads a single Fox transmission across a **1,512 Hz** bandwidth from 750 to 2262 Hz and removes the earlier restriction that Hounds call above 1,000 Hz [7]. SuperFox requires the DXpedition to hold a key issued by the WSJT-X team, and the release notes for 3.0.2 and 3.2.0-rc1 show continued work on its message validation and a TLS fix that had broken SuperFox verification on clean Windows installs [8].

Decoders beyond WSJT-X

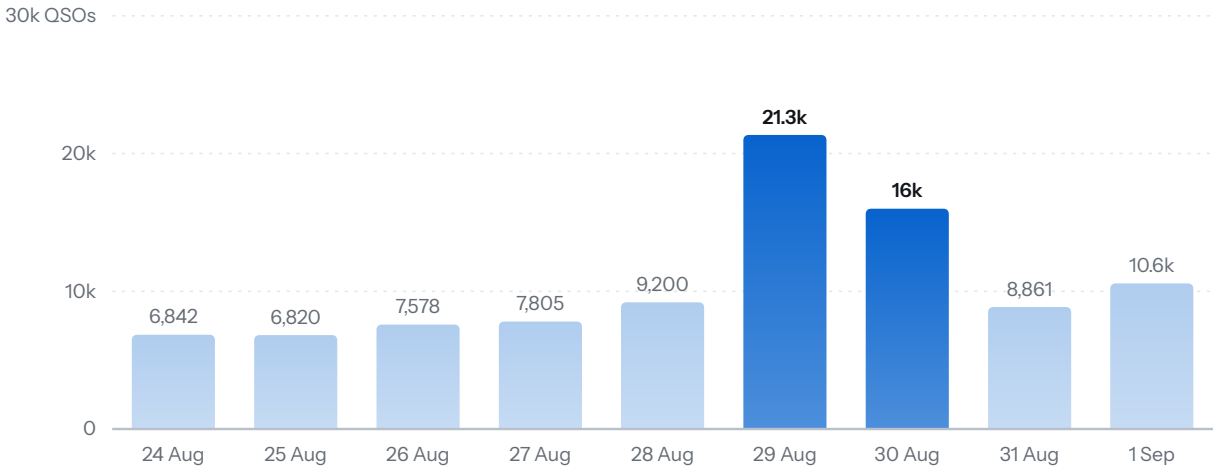
WSJT-X is the reference implementation, but it is not the only FT8 program. JTDX and the community "JTDX Improved" builds offer an alternative decoder and interface, and PSK Reporter's software-in-use list for the week to 8 November 2026 shows a long tail of other clients — the Aurora SDR application in dozens of versions, Brick-SDR, CloudHamSuite browser decoders, an ESP32 "ATS-Mini" FT8 build and various Android apps [2]. WSJT-X 3.0.0 answered the performance competition with **multithreaded FT8 decoding** in concurrent threads, which the team says yields "improved decoding speed and performance" [8].

FT4 and the contest weekends that drive it

FT4 is FT8's faster sibling, built on the same message format but with a **7.5-second** transmit cycle, so a complete contact takes about **30 seconds** against FT8's 60 — roughly 120 QSOs an hour instead of 60 [9]. The price is sensitivity: a shorter frame means less energy per bit, and FT4 gives up a few decibels against FT8. In practice that makes it the mode for when the band is open and the operator wants rate, which is why it is a contest mode first and a daily mode second.

The Club Log numbers show both halves of that. Across October 2026 FT4 logged **238,005** QSOs, about **4%** of all contacts and **6.2%** of digital ones — second among digital modes but roughly one-fourteenth of FT8 [1]. On ordinary days it runs **5,000–9,000** QSOs, with a steady floor that suggests a committed daily user base rather than a purely event-driven one. Then come the spikes: on **29–30 August 2026** FT4 jumped to **21,347** and **15,993** QSOs on consecutive days, three times its normal rate [1].

FT4 QSOs uploaded to Club Log around the WW Digi DX Contest, August 2026



Source: clublog.org/modes.csv. The contest ran 12:00 UTC 29 Aug to 11:59 UTC 30 Aug.

Those two days were the **World Wide Digi DX Contest**, a 24-hour event organised jointly by the World Wide Radio Operators Foundation and the Slovenia Contest Club, running from 12:00 UTC on Saturday 29 August to 11:59 UTC on Sunday 30 August 2026[10]. It is restricted to **FT4 and FT8** on 160, 80, 40, 20, 15 and 10 m; the exchange is a four-character Maidenhead grid, QSO points scale with distance, and two-character grid fields are multipliers. Categories cover high power, low power and QRP at 5 W[10]. The 2026 rules carried two changes worth noting because they foreshadow where digital contesting is going: **fully autonomous operation is prohibited** — a human must initiate each call — and logs are due within **48 hours**, by 2359 UTC on 1 September[10]. WSJT-X has a dedicated "WW Digi Contest" special-operating-activity setting that switches the exchange and Cabrillo output accordingly[10]. The ARRL's own International Digital Contest, held 6–7 June 2026, is the other major FT4/FT8 fixture on the calendar[11].

FT2: the experiment on the speed axis

If FT4 halves FT8's cycle, FT2 halves it again. On **16 February 2026 at 22:47 UTC** a group of Italian amateurs — IZ8VYF, IZ8XXE and IC8TEM are the callsigns reported — completed the first on-air exchanges with a **3.8-second** cycle, finishing QSOs in **7 to 11 seconds**[9]. The software was not an official WSJT-X build but a fork of WSJT-X 3.0.0-rc1 called Decodium, developed by IU8LMC with support from ARI Caserta, which reuses the FT8/FT4 codec with the timing compressed[9]. DXZone, which reported the tests, is explicit that FT2 "is not an official WSJT-X release and not a finalized protocol" and only works "when signals are strong and conditions are favorable"[9]. The Decodium project has since moved to a 4.0 "Shannon" core with FT8, FT4, FT2 and Q65 in a Qt/QML interface[12]. Whether FT2 ever reaches wide use will depend on the WSJT-X team's stance toward forks, discussed in the software timeline section below; for now it is an interesting experiment with a handful of participants, not an active mode.

WSPR and the propagation-beacon layer

WSPR — "Weak Signal Propagation Reporter", pronounced "whisper" — is the one mode in this report that produces no contacts at all, and it is still the second-busiest digital signal on HF by PSK Reporter's count. Each transmission is a two-minute beacon carrying a call sign, a grid locator and a power level; receiving stations decode it and upload the spot to WSPRnet, building a continuous worldwide propagation map[13]. There is no exchange, no acknowledgement and no QSO, which is why WSPR is invisible in Club Log's data and why its **193,973** reports in a two-hour PSK Reporter window — nearly 20 times JS8's count and more than FT4's — represent a very large population of unattended stations rather than operators at keyboards[2].

The WSPRnet spot database page lists the standard USB dial frequencies, and they sit just above the FT8 segments on most bands: **1.8366, 3.5686, 5.2872 and 5.3647, 7.0386, 10.1387, 14.0956, 18.1046, 21.0946, 24.9246 and 28.1246 MHz** on HF, with 0.136 and 0.4742 MHz on the LF and MF bands and 13.5539 MHz in the 22 m ISM band[13]. The live spot table on 8 November 2026 showed what a typical afternoon looks like: dozens of 200 mW and 1 W stations being heard across the Atlantic, a 200 mW Spanish beacon (EA6EE) spotted at 9,800 km in California at −18 dB, and a German 1 W signal (DL1DUZ) reaching Massachusetts on 15 m at −19 dB[13]. Most spots carry the mode tag "W-2", the classic two-minute WSPR frame, with a minority marked "F-120" — that is FST4W, the newer WSJT-X beacon mode that can run at 120, 300, 900 or 1,800-second periods for greater sensitivity on the lower bands[13].

Because the whole point is unattended monitoring, WSPR has grown its own analytics ecosystem. wspr.rocks, built by Phil VK7JJ, runs live queries against a ClickHouse copy of the WSPRnet database and publishes a daily "Top Spotters" leaderboard ranking the top 200 reporters by spot count, distance and band; it deliberately excludes balloon telemetry — a large and growing share of WSPR traffic comes from high-altitude pico-balloons encoding telemetry in the protocol's spare bits — and lets users filter out suspected false decodes[14]. WSPRnet itself links a further set of third-party tools: the M0XDK map, KB9AMG's monthly statistics, WA2ZKD's spot analysis, DJ2LS's heat map and LU7AA's graphs[13].

On the software side, WSJT-X remains the usual transmitter and decoder, and the 3.2.0-rc1 notes record a fix so that "WSPR and FST4W beacon scheduling works with 900- and 1800-second periods after Tune, with Tx Next, and with fixed Round Robin selections"[8]. The practical consequence for anyone surveying the bands is that a steady smear of signals a few hundred hertz above the FT8 frequency on every band is WSPR, and that transmitting there is a quick way to learn where one's own antenna is actually being heard.

JS8Call: conversation on the FT8 engine

FT8's limitation — Taylor's "bare minimum for a valid contact" — is exactly what JS8Call set out to fix. Created by Jordan Sherer, KN4CRD, and first released on **4 January 2019**, JS8Call takes the FT8

modulation and decoder and wraps a free-text, keyboard-to-keyboard protocol around it, so that the same 50 Hz signal that can only say "R-15" in FT8 can carry an actual sentence [15]. The ARRL now describes it as the mode that "has replaced PSK31 as the keyboard to keyboard mode" [6], which is a significant verdict given PSK31's two-decade run in that role.

The project's current home is **JS8Call-Improved**, a community continuation maintained by contributors from the original JS8Call 2.2.0 effort. Its latest release is **version 3.0.3 of 12 July 2026**, with Windows 10/11, Linux (x86_64 and ARM64) and macOS (Intel and Apple Silicon) builds, and it remains "100% backward-compatible with all JS8 stations" [15]. The feature list explains why it has found a niche that FT8 cannot fill:

- Messaging that decodes down to **−24 dB SNR**, inherited from the FT8 engine [15].
- Directed messages addressed to a call sign, with automatic acknowledgements, plus **relayed and store-and-forward** messages that can hop through an intermediate station [15].
- **Heartbeat** transmissions and grid monitoring so stations discover who can hear whom without a conversation [15].
- Group messaging for regional nets, an **APRS-IS gateway** that lets an HF station inject position reports or messages into the APRS internet network, and beaconing [15].
- Multiple speed sub-modes added after the original release [16].

JS8Call positions itself explicitly for "emergency communication, grid-down scenarios, off-grid expeditions", and says it is "used daily by operators involved in EMCOMM, preparedness networks, off-grid communication groups" as well as general HF users [15]. The 2020 Dayton Hamvention Technical Achievement Award and 2021 Amateur Radio Software Award are listed on its site [15]. That positioning shapes who uses it: many JS8Call operators run heartbeat networks and relay traffic rather than chase DX, and most do not upload to Club Log, so the mode's **13,392** reception reports per two hours on PSK Reporter are the only broad activity number available [2]. That is about 0.3% of FT8's report volume, but still tens of thousands of decodes a day from a self-contained community.

Frequencies and etiquette

JS8Call's defaults sit **4 kHz above** the FT8 watering holes so that the two modes do not collide: **1.842, 3.578, 7.078, 10.130, 14.078, 18.104, 21.078, 24.922 and 28.078 MHz** on HF, with 50.318 MHz on 6 m [16]. The 30 m frequency is the exception — 10.130 MHz sits *below* FT8's 10.136 — and the Signal Identification Wiki adds 27.245 MHz as an 11 m channel used by non-amateur experimenters [16]. The documentation stresses that these are not fixed: "these are not set in stone and can easily be changed in your settings" [16].

Where JS8Call fits against FT8 and VarAC

The trade-offs are straightforward. Against FT8, JS8Call sacrifices nothing in sensitivity at its slowest speed but takes far longer per message and requires both operators to be present or to accept store-and-forward delays. Against the ARQ modes discussed next — VARA and VarAC — it is slower by an order of magnitude on a good path but works on paths where VARA cannot even connect, and it

needs no licence fee and no Windows machine; the WSJT-X 3.0.2 Linux packaging fix specifically mentions avoiding the "improper removal of dependent packages such as JS8Call" when both are installed from distribution repositories [8]. For a keyboard conversation at the noise floor it has no real competitor, which is why it survived while PSK31 did not.

VARA, VarAC and Winlink: the ARQ family

The modes so far are all broadcast-style: one station transmits, anyone can decode. The ARQ family is different — two stations establish a connected link, acknowledge every block, and retransmit on error, which allows real throughput (files, images, email) at the cost of working only between two stations at a time. On HF in 2026 that family is dominated by one software modem, **VARA HF**, and two applications that ride on it: **Winlink** for email and **VarAC** for live chat.

The VARA HF modem

VARA HF is a proprietary Windows software modem using OFDM — information spread across many closely spaced carriers — with a restricted free mode and a paid licence that unlocks the higher speed levels [17]. It is explicitly supported by Winlink Express and used by VarAC, and that installed base is its main strength: as the Schaumburg Amateur Radio Club's September 2026 comparison puts it, "VARA is a practical starting choice when your intended gateway or operating partner already uses it" [17]. Its weaknesses are the ones that come with closed software: Linux users must run it under Wine, Raspberry Pi installs are fiddly, and nobody outside the developer can inspect or modify the modem [17].

The open-source challenger is **Mercury**, developed by Rhizomatica as part of its HERMES project. It is GPL-3.0, runs natively on Linux, Windows, macOS and Raspberry Pi, also uses OFDM with ARQ, and presents a VARA-style TCP command interface on ports **8300 (commands) and 8301 (data)** so that Winlink clients such as Pat can talk to it [17]. The catch is that sharing a command interface does not make the radio signals interchangeable: "Mercury needs a compatible Mercury station at the far end. Changing your local modem does not convert a VARA-only gateway into a Mercury gateway" [17]. Some Mercury commands, such as compression, are acknowledged without being implemented [17]. For now it is a tool for coordinated experiments between consenting stations rather than a drop-in replacement.

VarAC: chat on VARA

VarAC, written by Irad Deutsch, 4Z1AC, is a free (for amateurs and CB operators) chat and EmComm application built on VARA. The current release is **V16.1.8**, and the project claims use by "more than 90,000 amateur radio operators in over 100 countries" — a self-reported figure that cannot be verified from independent data, but one consistent with the mode's visibility on PSK Reporter, where the day's first "rare country" entry on 8 November 2026 was VP9NM in Bermuda on **14.105 MHz VARAC**, heard by F4FFD, N9HEL and DL4DTL among others [18] [2]. A paid professional edition with a mobile app, ALE and an API is sold separately under the SafecomLink name [18].

The feature set is what distinguishes it from JS8Call: real-time "is typing" indicators, selectable **500 Hz or 2,300 Hz** bandwidth, binary file and image transfer, a VMail inbox with relay notifications, an email gateway through other VarAC stations, a ping to test a link before connecting, one-click QSY up or down the band, automatic ADIF logging, canned and automatic messages, and even games ("HamPlay") over RF[18]. The calling frequencies are a dedicated set well away from the FT8 and JS8 segments: **14.105, 21.105, 28.105, 7.105 and 3.595 MHz** are listed as "popular", with **1.995, 5.355 (non-US), 10.133, 18.107 and 24.927 MHz** as additional, and a weekly broadcast-mode net runs on Sunday from **14:00 to 16:00 UTC on 14.108750 MHz** ("20 m slot 15")[18]. Hosted on PSK Reporter, VarAC publishes a live map of who is currently online, which is the practical way to find a partner.

Winlink: HF email

Winlink is the oldest of the three and the one with an institutional user base. It is a volunteer project of the Amateur Radio Safety Foundation that moves ordinary email over radio via a network of Radio Message Server (RMS) gateways, each reporting its status to a central system[19]. The live system page maps every gateway, colour-coded green for reporting normally, yellow after two hours' silence and red after four, and marks "Hybrid Network" participants with an H — stations that will forward messages by RF if their own internet link goes down[19]. Gateways are grouped by **service code**: PUBLIC for maritime and open amateur use, EMCOMM for emergency gateways closed to the public, and private codes for closed groups[19]. Channel lists per gateway and mode are downloadable for client software, and the page also shows real-time telnet connections, a propagation map of recent RF QSOs, and tables of gateways and clients running outdated software[19].

Winlink's HF modes include VARA HF, the older open-source ARDOP, and hardware Pactor modems, but the Winlink traffic page gives only "a generalized indication of system usage" that "should not be considered as an accurate (exact) count of message traffic", and no per-mode figures are published[19]. The mode's weight therefore has to be inferred from its role: it is the standard HF email tool for ARES/RACES groups, offshore sailors and anyone needing to reach an ordinary email address without the internet, and it is the reason VARA HF has the installed base it does.

> KEY FINDING
>
> If you want to reach a Winlink gateway today, VARA HF is effectively mandatory; Mercury is only for peer-to-peer experiments where both ends agree to run it.

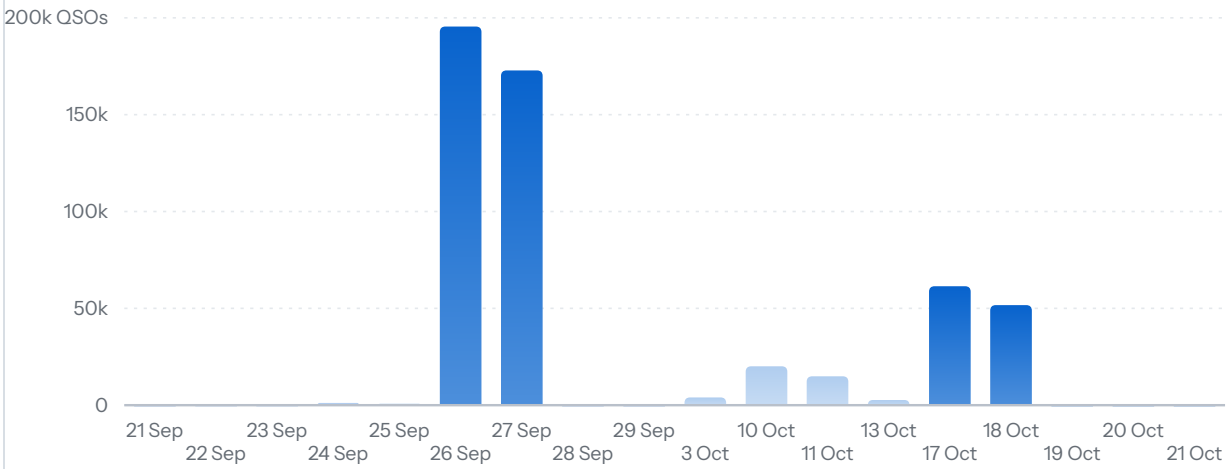
RTTY: dormant on weekdays, enormous on contest weekends

RTTY is the original keyboard-to-keyboard mode, descended from mechanical Teletype machines hooked to amateur transmitters in the late 1940s. It still uses 5-bit Baudot code at **45.45 baud** with **170 Hz** frequency shift — about 60 words per minute — though the mechanical machines have long been replaced by PCs and sound cards[6]. The ARRL summarises its current position in one line:

"RTTY is popular mode for contesting"[6]. Club Log's daily data shows just how literally that should be read.

On a typical weekday in October 2026 RTTY logged between **10 and 200** QSOs — 15 on 20 October, 10 on 21 October, 16 on 22 October — numbers that put it below Olivia-style "Other" modes[1]. Then on 26 and 27 September it logged **195,473** and **172,855** QSOs, more than CW and phone combined on those days, for the CQ World Wide RTTY contest[1]. Three weeks later, 17–18 October brought **61,453** and **51,640** for the JARL World Wide RTTY Contest[1]. Those four days alone account for **481,421** of the **494,000-odd** RTTY QSOs logged across September and October combined.

RTTY QSOs uploaded to Club Log, 21 Sep – 21 Oct 2026



Source: clublog.org/modes.csv. 26–27 Sep is CQ WW RTTY; 10–11 Oct is Makrothen; 17–18 Oct is the JARL WW RTTY Contest (formerly JARTS).

The JARL event is itself a sign of the mode's institutional durability. The Japan Amateur Radio League announced that "starting in 2026, JARL will officially take over the JARTS Worldwide RTTY Contest, which has been held for 34 years", renaming it the JARL World Wide RTTY Contest and running it on **3.5, 7, 14, 21 and 28 MHz** from 00:00 UTC on the third Saturday of October[20]. CQ WW RTTY, the larger event, adopted the same two rule changes seen in WW Digi: a **48-hour** log deadline (2359 UTC 29 September 2026) and a prohibition on autonomous operation[21].

AA5AU's rttycontesting.com maintains the master calendar, and the 2026 edition shows an event most weekends of the first half of the year[11]:

CONTEST	2026 DATES	SPONSOR
SARTG New Year's	1 Jan	SARTG (Scandinavia)
ARRL RTTY Roundup	3–4 Jan	ARRL
BARTG RTTY Sprint	24–25 Jan	BARTG (UK)

CONTEST	2026 DATES	SPONSOR
XE RTTY (FMRE)	7–8 Feb	FMRE (Mexico)
CQ WW WPX RTTY	14–15 Feb	CQ
NCJ NAQP RTTY	8 Feb – 1 Mar window	NCJ
YB DX RTTY	14 Mar	YB DX Contest Club
BARTG HF RTTY	21–23 Mar	BARTG
EA RTTY	4–5 Apr	URE (Spain)
SP DX RTTY	25–26 Apr	PKRVG (Poland)
ARI International	2–3 May	ARI (Italy)
A. Volta RTTY	9–10 May	Contest Volta
ARRL International Digital	6–7 Jun	ARRL (FT4/FT8, not RTTY)
URC DX RTTY	2 Oct	URC
Makrothen	10–11 Oct	Makrothen
CQ WW RTTY	26–27 Sep	CQ
JARL WW RTTY	17–18 Oct	JARL (formerly JARTS)

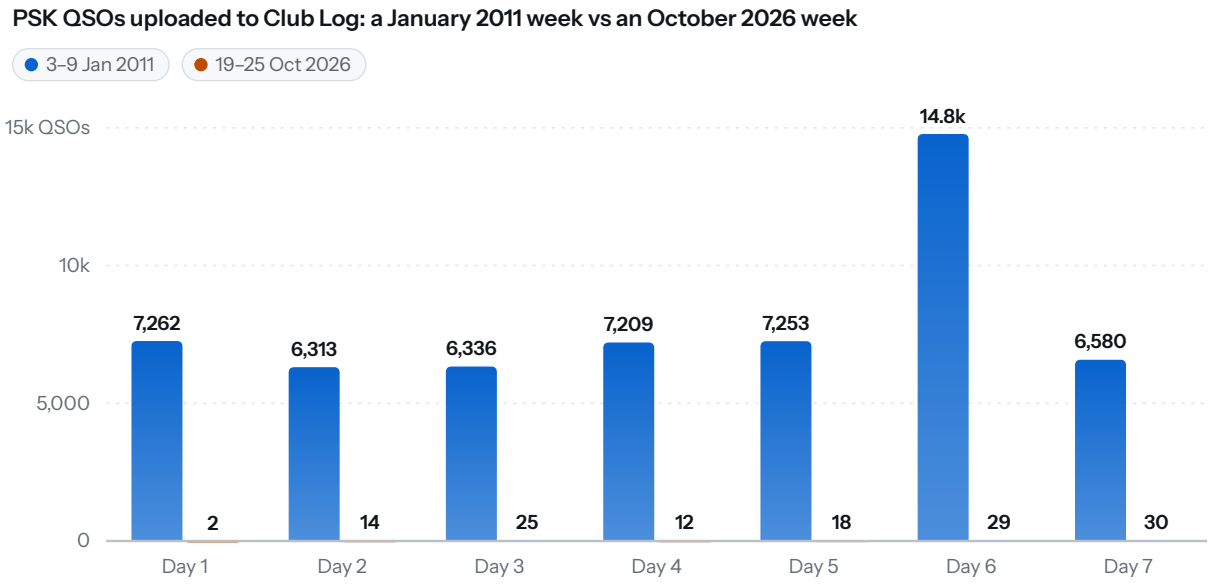
The Open Ukraine RTTY contest was cancelled for 2026[11]. The pattern is clear: RTTY is a contest mode with an active, organised calendar and large weekend participation, but almost no casual daily traffic. Its weekday activity has been absorbed by FT8 for DX and JS8Call/VarAC for conversation.

JTTY: the WSJT-X team's successor bid

The most significant RTTY development in years arrived on **23 September 2026** in WSJT-X 3.2.0-rc1: a new mode called **JTTY**, described as "a new digital mode for fast RTTY-style contest exchanges and other keyboard-to-keyboard communication"[8]. Unlike FT8 and FT4 it "can transmit at any time rather than in fixed T/R periods", which is what makes it feel like RTTY. The waveform is **4-tone GFSK** with **1.888-second** frames in about **127 Hz** of bandwidth — narrower than a 170 Hz-shift RTTY signal — with "far better weak-signal performance and a very low error rate"[8]. Function keys F1–F8 provide contest exchanges, messages queue while transmitting, signal subtraction recovers overlapping signals, and an **MMTTY-compatible interface** connects to N1MM Logger+ version 1.0.11449 or later so that existing RTTY contest workflows carry over[8]. Whether contest sponsors admit JTTY to RTTY categories, or whether it stays a separate digital mode, will determine whether it revives weekday keyboard activity or simply adds another option on contest weekends. As of November 2026 it exists only in a release candidate.

PSK31, Olivia and the legacy keyboard modes

PSK31 — binary phase-shift keying at 31.25 baud, occupying roughly **100 Hz** — was the sound-card mode that made HF digital a mass pursuit in the early 2000s[6]. Its fall is the sharpest in the Club Log record. On 1 January 2011 Club Log users uploaded **7,583** PSK QSOs; through that month the mode ran **4,300–8,900** QSOs every single day, comfortably ahead of RTTY on non-contest days[1]. In October 2026 the entire month produced **4,522** — less than one January 2011 day — and most individual days logged between 3 and 30[1].



Source: clublog.org/modes.csv. Both weeks run Monday to Sunday.

The ARRL's page, which still carries a 2010 screenshot of "20 Meters PSK31 on a Sunday afternoon", concedes the point: JS8Call has replaced it as the keyboard mode, "though 20M PSK31 can still be found", and "it can be surprisingly difficult to find 40M PSK31 activity"[6]. The suggested workaround — using Hamspots.net to arrange contacts on other bands — is itself an admission that spontaneous PSK31 QSOs are now rare[6].

Olivia: small, but organised

Olivia is the one legacy keyboard mode with a visibly active community in 2026. Developed at the end of 2003 by Pawel Jalocha and first tested on the Europe–Australia path by OH/DK4ZC and VK2DSG, it is a multi-frequency-shift-keying mode designed for "difficult (low signal-to-noise ratio plus multipath)" conditions, and the community claims decodes when "the amplitude of the noise is over ten times that of the digital signal"[22]. Variants are named by tone count and bandwidth — **8/250**, **16/500** and **32/1000** are the common ones — and because MFSK is a constant-envelope modulation, Olivia is forgiving of amplifier linearity in a way that FT8 and PSK are not[22].

The Olivia Digital DXers Club runs a dedicated site with a live station-spotting board (filterable by mode and band), a Groups.io list, a Discord server, a Facebook group and a Club Log league for comparing DXCC progress among members[22]. It promotes voluntary channelisation: suggested calling frequencies such as **14.0725 MHz for 8/250** (and 14.0715 MHz in scheduled activations) so that a signal too weak to see on the waterfall can still be found[22][23]. The event calendar on 8 November 2026 listed a scheduled first-QSO activation for 9 November on 14.0715 MHz at 10 W and the **2026 Winter Olivia QSO Party**, running 24–31 December on 80–10 m with free participation certificates for ADIF or text logs[22]. There are also summer parties and sprints. That is the profile of a niche mode that is actively sustained rather than one slowly fading.

The rest of the fldigi family

The remaining sound-card modes — MFSK16, Thor, DominoEX, MT63, Contestia, Throb, Hellschreiber and the rest — live mainly inside W1HKJ's fldigi, which the ARRL recommends as the general multi-mode package for Linux, Windows and macOS[6]. MT63 retains a specific role in US emergency nets as the mode behind FLAMP/FLMSG bulletin traffic, and Contestia is Olivia's faster cousin, but there is no public activity data for any of them. The only ceiling available is Club Log's "Other" column, which bundles every mode outside the six named ones: it ran **600–2,400** QSOs a day through autumn 2026, a total of 34,399 for October — around 1% of FT8[1]. All of the legacy keyboard modes combined, plus any logged JS8 and VARA contacts that end up in that column, amount to less than one percent of logged HF digital activity.

FreeDV RADE: digital voice arrives on HF

FreeDV is the open-source digital voice project behind Codec2, and in **June 2025** it released its flagship mode, the **Radio Autoencoder (RADE)**, which pairs machine learning with classical DSP[24]. RADE works down to **−2 dB SNR**, occupies about **1.5 kHz** against SSB's 3 kHz, and yet carries about 8 kHz of voice audio, so speech sounds more natural than sideband; its favourable peak-to-average power ratio also runs amplifiers cooler[24]. The cost is computing: it needs more memory and CPU than earlier FreeDV modes, though it runs on a Raspberry Pi 4 or 5[24].

	FreeDV RADE	vs	SSB
Occupied bandwidth	~1.5 kHz	·	~3 kHz
Voice audio bandwidth	~8 kHz	·	Partial speech range
Lowest usable SNR	−2 dB	·	Not stated
Processing	Pi 4/5 or PC; FlexRadio 8000/ Aurora native	·	None

Figures from ARDC's 2026 FreeDV RADE report.

In **May 2026** the team worked with FlexRadio to make RADE a native mode on 8000 and Aurora series radios, with 6000-series owners running it on a networked Pi; a C library (rade_c) is enabling further integrations, and **RADE v2** is in development with a target bandwidth under 1 kHz[24]. The ARRL asked on 25 September 2026 whether RADE will be "the next SSB"[25]. Activity is still net-based — Peter Marks, VK3TPM, runs a weekly RADE net drawing stations from four Australian call areas — and the only live indicator is the FreeDV Reporter at qso.freedv.org; no QSO counts exist[24].

2026 software timeline: WSJT-X 3.x, JTTY, FT2 and the forks

2026 was the busiest year for WSJT-X since FT8's launch. Version 3.0.0 on **8 April** was the first general-availability release since 2.7.0 in February 2025, and it coincided with the project's move from SourceForge to GitHub and a new home page[26][5].

- Feb 2025 — **WSJT-X 2.7.0**
  Last GA release before the 3.x line.
- Sep 2025 — **WSJT-X 3.0.0-rc1**
  Band buttons, multithreaded FT8 decoding previewed.
- 16 Feb 2026 — **First FT2 QSOs**
  3.8 s cycle on the Decodium fork; experimental.
- 8 Apr 2026 — **WSJT-X 3.0.0 GA**
  Move to GitHub; multithreaded FT8; SWR/power display; band hopping.
- 4 May 2026 — **WSJT-X 3.0.1**
  Bug fixes; PSKReporter version string corrected.
- 18 Jun 2026 — **WSJT-X 3.0.2**
  MAP65 returns; TLS fix for SuperFox verification; automated builds.
- 12 Jul 2026 — **JS8Call-Improved 3.0.3**
  Current JS8Call release.
- 23 Sep 2026 — **WSJT-X 3.2.0-rc1**
  JTTY mode; Q65 pileup mode; armhf packages; TX Inhibit over UDP.

WSJT-X 3.2.0-rc1 — what changed for HF users

4 buffs · **2** new

Modes 1

ITEM	STAT	BEFORE	AFTER	CHANGE
JTTY RTTY-style, free-running, N1MM interface	New mode	—	4-tone GFSK, 1.888 s frames, 127 Hz	New

FT8 2

ITEM	STAT	BEFORE	AFTER	CHANGE
Multithreaded decoding	Reliability	stalls under load	fixed	Buff
SuperFox	Input validation	accepts bad calls	rejects before TX	Buff

WSPR/FST4W 1

ITEM	STAT	BEFORE	AFTER	CHANGE
Beacon scheduling	900/1800 s periods	broken after Tune	works	Buff

Platform 1

ITEM	STAT	BEFORE	AFTER	CHANGE
Raspberry Pi armhf	Packages	removed	restored	Buff

Integration 1

ITEM	STAT	BEFORE	AFTER	CHANGE
TX Inhibit via UDP	Shared-band PTT hold	—	added	New

Source: WSJT-X Release_Notes.txt, 23 Sep 2026.

The fork question hangs over all of this. Decodium (FT2), JTDX and the "improved" builds all derive from WSJT-X code, and the 3.0.0 announcement contained a pointed request:

> *"The authors and Copyright holders of WSJT-X request that derivative works should not publish programs based on features in WSJT-X before those features are made available in a General Availability (GA) release of WSJT-X. We will cease making public Release Candidates if this request is ignored."* [26]

Dial frequency reference, 160–10 m

All frequencies are USB dial settings in MHz, compiled from the sources cited; they are conventions shipped as software defaults, not regulations, and IARU Region 1 uses some alternates (7.056 and 14.090 MHz for FT8) [4] [13] [16] [18] [22]. Listen before transmitting.

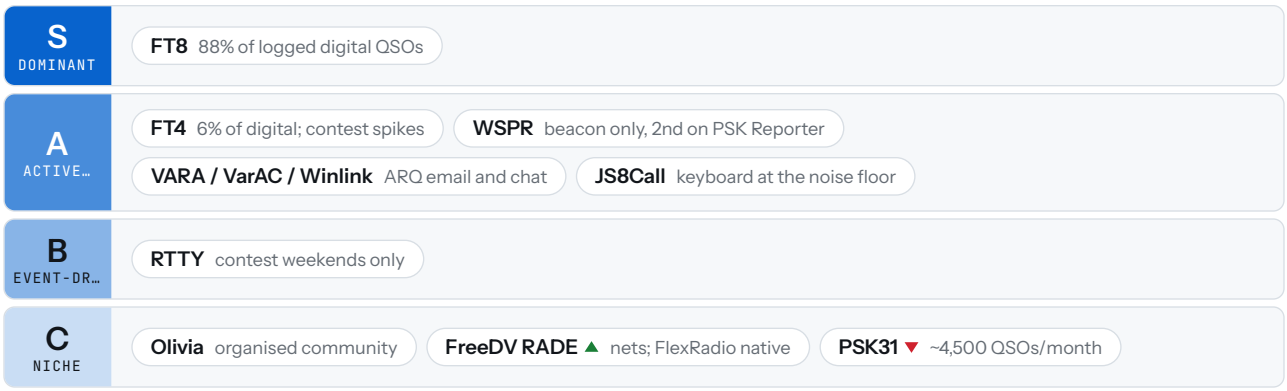
BAND	FT8 [4]	JS8CALL [16]	WSPR [13]	VARAC [18]	OLIVIA 8/250 [22]
160 m	1.840	1.842	1.8366	1.995	—
80 m	3.573	3.578	3.5686	3.595	—

BAND	FT8 [4]	JS8CALL [16]	WSPR [13]	VARAC [18]	OLIVIA 8/250 [22]
60 m	5.357	—	5.2872 / 5.3647	5.355 (non-US)	—
40 m	7.074	7.078	7.0386	7.105	—
30 m	10.136	10.130	10.1387	10.133	—
20 m	14.074	14.078	14.0956	14.105	14.0725
17 m	18.100	18.104	18.1046	18.107	—
15 m	21.074	21.078	21.0946	21.105	—
12 m	24.915	24.922	24.9246	24.927	—
10 m	28.074	28.078	28.1246	28.105	—

Olivia's community publishes a fuller per-band chart as an image on its site; only the 20 m 8/250 calling frequency is reproduced here from the text [22].

Bottom line

HF digital modes by measured activity, November 2026



Ranking rests on Club Log October 2026 QSO counts and PSK Reporter report counts of 8 Nov 2026; VARA, Winlink and RADE placed on project data since they produce no logged QSOs.

Install WSJT-X 3.0.2 and sit on 14.074 or 7.074 MHz and you are on the mode that carries well over half of all logged HF contacts. Add JS8Call-Improved 3.0.3 for conversation, VARA with VarAC or Winlink Express for files and email, and fldigi only if Olivia or an RTTY contest weekend calls. PSK31 is effectively finished; RTTY lives for sixteen weekends a year; JTTY and RADE are the two developments to watch in 2027.

▼ **Terms used in this document (20)**

- **ADIF** — Amateur Data Interchange Format — the standard file format for exchanging log data between programs.

- **ALE** — Automatic Link Establishment — a system that scans channels and selects the best one for a connection automatically.
- **APRS** — Automatic Packet Reporting System — the amateur position and short-message network, normally carried on VHF packet.
- **ARQ** — Automatic repeat request — a connected-mode protocol in which the receiver acknowledges each block and asks for retransmission of errors.
- **Baudot** — The 5-bit character code used by teleprinters and still by amateur RTTY.
- **Cabrillo** — The standard plain-text log format that contest sponsors require for submissions.
- **DXCC** — The ARRL's DX Century Club award for confirming contacts with 100 or more countries ("entities").
- **EMCOMM** — Emergency communications; amateur radio support to public safety and relief agencies when normal infrastructure fails.
- **fldigi** — W1HKJ's free multi-mode digital program, the standard home of PSK31, Olivia, MT63, RTTY and dozens of other sound-card modes.
- **FST4W** — A newer WSJT-X beacon mode with selectable 120 to 1,800-second periods, more sensitive than WSPR on LF and MF.
- **GFSK** — Gaussian frequency-shift keying — FSK with smoothed transitions between tones to narrow the occupied bandwidth.
- **Maidenhead grid** — The four- or six-character locator system (e.g. FN31) that encodes a station's position in roughly 100 km squares.
- **MFSK** — Multi-frequency shift keying — a modulation using many tones, one at a time, which gives robust performance against fading and multipath.
- **N1MM Logger+** — The most widely used free contest logging program; its MMTTY interface is the de facto standard for RTTY contesting.
- **OFDM** — Orthogonal frequency-division multiplexing — a modulation that spreads data across many closely spaced sub-carriers.
- **QRP** — Low-power operation, conventionally 5 W or less.
- **QSO** — A two-way amateur radio contact; the basic unit of logging and award credit.
- **RMS** — Radio Message Server — a Winlink gateway station that passes radio email to and from the internet.
- **USB dial** — The frequency a radio's display shows when set to upper sideband; the actual digital signal sits 200–3,000 Hz above it.
- **WSPR** — Weak Signal Propagation Reporter — a beacon protocol whose decodes are uploaded to a central database to map HF propagation.

SOURCES

1 Club Log — daily QSO counts by mode (modes.csv)
https://clublog.org/modes.csv

2 PSKReporter Statistics — modes over last 2 hours, software in use
https://pskreporter.info/cgi-bin/pskstats.pl

3 ARRL — Mode Usage Evaluation: 2017 was the Year When Digital Modes Changed Forever
http://www.arrl.org/news/view/mode-usage-evaluation-2017-was-the-year-when-digital-modes-changed-forever

4 W5IAS FT8 Division — Frequency Guide (FT8 & JS8Call)
https://w5ias.com/member/divisions/ft8-division/ft8-division-frequency-guide/

5 WSJT-X — Official Home
https://wsjtx.github.io/wsjtx/index.html

6 ARRL — Digital Data Modes
http://www.arrl.org/digital-data-modes

7 Jarvis Island 2024 — Introducing the SuperFox
https://jarvisisland2024.com/operating/super-fox-mode

8 WSJT-X Release Notes (Release_Notes.txt)
https://wsjtx.github.io/wsjtx/Release_Notes.txt

9 DXZone — FT2: New Ultra-Fast Digital Mode Tested on HF
https://www.dxzone.com/ft2-new-ultra-fast-digital-mode-tested-on-hf/

10 KE2YK — WW Digi DX Contest: FT4 & FT8 August 29–30
https://ke2yk.com/2026/08/27/ww-digi-dx-contest-ft4-ft8-august-29-30/

11 rttycontesting.com — RTTY Records, Rules & Results (2026 calendar)
https://www.rttycontesting.com/records/

12 GitHub — Decodium 4.0 Core Shannon
https://github.com/iu8lmc/Decodium-4.0-Core-Shannon/

13 WSPRnet — Spot Database and frequencies
https://www.wsprnet.org/drupal/wsprnet/spots

14 wspr.rocks — WSPR Top Spotters
https://wspr.rocks/topspotters/

15 JS8Call-Improved — Modern HF Digital Communication
https://js8call.com/

16 Signal Identification Wiki — JS8
https://www.sigidwiki.com/wiki/JS8

17 N9RJV — Mercury vs. VARA HF: Pros, Cons, and Practical Choices
https://www.n9rjv.org/2026/09/mercury-vs-vara-hf/

18 VarAC — Home
https://www.varac-hamradio.com/

19 Winlink — Live System Information
https://winlink.org/RMSChannels

20 JARL Contest — JARL World Wide RTTY Contest
https://www.jarl.org/English/4_Library/A-4-3_Contests/index_eng.html

21 CQ WW RTTY — Rules
https://cqwwrtty.com/rules.htm

22 Olivia Digital Mode on HF — Olivia Digital DXers Club
https://oliviadigitalmode.org/

23 DXZone — Olivia Digital Mode on HF: Community and Technical Information
https://www.dxzone.com/dx36706/olivia-digital-mode-on-hf-community-and-technical-information.html

24 ARDC — FreeDV RADE: A New Approach to Digital Voice over HF
https://www.ardc.net/freedv-rade-a-new-approach-to-digital-voice-over-hf-now-integrated-into-popular-radios/

25 ARRL — Will RADE Be the Next SSB?
https://www.arrl.org/news/will-rade-be-the-next-ssb

26 MacHamRadio — WSJT-X Version 3.0.0 GA has been released
https://machamradio.com/blog/2026/04/10/wsjt-x-version-3-0-0-ga-has-been-released/

Researched and written with claude-fable-5-1, from the sources listed above. Figures are as reported by those sources. Exported November 29, 2026 from https://intel.innerpulse.net/doc/hf-digital-modes-in-2026-ft8-s-57-share-the-active-second-tier-and-what-remains, where the current version lives.