



R H I Z O M A T I C A

Rhizomatica releases Mercury, a fully open-source modem for digital on HF

May 2026 — Rhizomatica is pleased to officially launch Mercury, a completely open-source Digital Radio OFDM protocol for HF broadcast and peer-to-peer ARQ connections with compatible TCP interfaces, built for reliable store-and-forward email and file transfer over HF radio links. Mercury is the newest element of the HERMES software suite, actively developed by Rhizomatica since 2017, with generous funding from ARDC and others.

Mercury is written in C, released under a GPL-3.0 license, and features a modular architecture with per-direction mode selection, hybrid SNR + delivery feedback-based gear-shifting, split control/data channel design, and uses field-proven FreeDV digital data modes, with each mode kept resident in a pool, eliminating codec re-initialization overhead. Pre-built binaries are available for Windows and Debian operating systems and Mercury is suitable for use with most HF transceivers and completely compliant for amateur use.

In early tests, compared to the commercial alternative, Mercury has performed well and is nearly at parity in optimal SNR conditions and outperforms the alternative in poor SNR conditions.

“Not only has Rhizomatica developed a fully open-source software modem, they have done so to empower communities in need of their own communication infrastructure. We are proud to have supported Rhizomatica in this work, and very excited to see it now available to the amateur community and others around the world using HF for critical communication.” —Rosy Schechter (KJ7RYV), Executive Director of ARDC.

“I am very pleased to see Rhizomatica using the FreeDV data modes combined with their own custom ARQ protocol to send data over low SNR HF channels. It is great to

see *Rhizomatica embracing those waveforms, and spreading the use of open source in HF Data.*" —David Rowe (VK5DGR), inventor of Codec 2 and FreeDV.

More information can be found from the following sources, or by contacting Rhizomatica directly using the Contact information provided below.

MAILING LIST [<https://lists.riseup.net/www/info/hermes-general>]

SOURCE CODE [<https://github.com/Rhizomatica/mercury>]

YOUTUBE DEMOS [https://www.youtube.com/@rhizomatica_communications/playlists]

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CONTACT

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ABOUT

Rhizomatica Communications is a US-based non-profit with the mission to support communities to build and maintain self-governed and owned communication and energy infrastructure. [<https://www.rhizomatica.org>]

HERMES is an open-source software stack created by Rhizomatica to make it easier to use HF/shortwave radio for digital communications. Since 2017, together with social organizations and remote communities around the world, Rhizomatica has been designing, building and testing HERMES to create reliable, secure, long-range, autonomous voice and digital communications. [<https://hermes.radio/>]