


Inhaltsverzeichnis

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Seitenbild	<div style="text-align: center;"> <p>The 27th Annual ARRL and TAPR Digital Communications Conference</p> <p>September 26-28, 2008 • Chicago, Illinois</p>  </div> <p>WINMOR...A Sound Card ARQ Mode for Winlink HF Digital Messaging</p> <p>Rick Muething, KN6KB, AAA9WK Winlink Development Team 6143 Anchor Lane Rockledge, FL 32955 rmuething@cfl.rr.com</p> <p>Abstract: The improving computational performance of PCs and the near real-time response of PC operating systems now make it feasible to implement reasonable performance HF ARQ messaging protocols suitable for digital messaging. While Pactor (I, II, III) currently dominate and generally represent the best available performance, PC sound cards with appropriate DSP software can now begin to approach Pactor performance at lower cost than dedicated hardware HF modems. This paper covers the on-going development of an optimized sound card mode WINMOR, compatible with the popular Winlink 2000 message system^{1,2,3}. This effort leverages a prior feasibility project by the author in the evaluation of SCAMP⁴, an adaptation of RDFT for digital messaging systems. The paper reviews the development effort of WINMOR (WINlink Message Over Radio) from motivation through tool development, programming, testing and deployment in the WL2K system.</p> <p>Key Words: Winlink 2000, WINMOR, ARQ protocols, multi-carrier PSK, Sound Card Modes, Pactor, SCAMP, HF Channel Simulators</p> <p>Motivation: The PC, widely available DSP tools, well designed sound card/radio interfaces and improving amateur software skills have yielded a variety of sound card modes over the last several years. These modes range from simple DSP/software implementation of RTTY through complex streaming applications like Win DRM. It is one of the few remaining areas where amateurs can and do experiment. Many of the modes developed however are a replacement of existing "chat" modes or "broadcast" modes where absolute accuracy is not a requirement or data is limited to plain ASCII text. Today, however, a viable message system (with the need for compression and binary attachments) requires true "error-free" delivery of binary data. To achieve this there must be some "back channel" or ARQ (Automatic Retry request) so the receiving station can notify the sender of lost or damaged data and request retransmission or repair. HF Pactor (I, II, III) has served us well in this regard providing good performance (net bits/sec/ Hz bandwidth) and robustness. However the proprietary nature of high performance Pactor modems (Pactor II, III) can be cost prohibitive especially in applications such as emergency communications where wide deployment coupled with low average usage make it difficult to justify the investment in high performance but costly hardware. As developers of Winlink 2000 we are continually asked to supply a lower cost of entry than Pactor for those needing to access the WL2K system on HF.</p>

Seitenschutz

Bearbeiten	Alle Benutzer (unbeschränkt)
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[Das Seitenschutz-Logbuch für diese Seite ansehen.](#)

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