

## Winlink made Simple

Winlink can get kind of complicated, mostly because of the similar names for the software. Reviewing the names and uses:

### Winlink 2000

This the name of an internet network, with associated amateur radio stations. The radio stations and network enable radio amateurs to send and receive emails via radio, using standard email addresses. Protocols supported by the Winlink 2000 system are packet, pactor 1, pactor 2, pactor 3, and WINMOR.

WINMOR is a new communication protocol, recently completing beta testing. It is designed to function with the Sound Card on computers, without the need of a TNC. It is designed to be used on HF, as an alternative to pactor. The throughput speed of WINMOR is between that of pactor 2 and pactor 3. Winlink Gateway Stations, using WINMOR, enable users to send and receive emails via radio, such as is done with packet and pactor.

For example:

Jim, KE7HTU in Davenport would have a Winlink email address of ke7htu@winlink.org.

Heidi, KC7CCL in College Place would have a Winlink email address of kc7ccl@winlink.org.

If they each were operating “portable” and connected via packet to their local VHF/UHF **Winlink Gateway** station, and both of those gateway stations had communications to the internet, Jim and Heidi could exchange emails with each other. In fact they could exchange emails with someone in any country in the world which allowed Third Party Traffic, and had an email address.

ARRL Radiograms, ICS Forms, etc. can be imbedded in the email directly, or as Attachments.

### Generic Packet Software

Hams who want to do radio email can use their regular packet software, probably already on their computer. This is done by Connecting to a Winlink Gateway. The Winlink Gateway will prompt the user with a Greeting and then ask for a Command. Attachments are not supported.

*This is the simplest and easiest method to try out the Winlink 2000 radio email system (using packet radio). However it is **NOT** recommended for normal use.*

- H** will give the Help files
- I** will give information about the Winlink 2000 RMS station which links the Winlink Gateway station to the internet.
- LM** will list message numbers for the user.
- RM** will Read all messages for the user.
- R xxxx** will read the message with the number of xxxx.
- K xxxx** will kill (delete) the message with the number of xxxx

**KM** will kill (delete) all messages for the user

**SP SMTP:** [address@xyz.com](mailto:address@xyz.com) will initiate a process to create and send an email to : [address@xyz.com](mailto:address@xyz.com) . Multiple addresses are separated by commas or semi-colons.

**BYE** Disconnects

### **AirMail (User software)**

This is a User program, used to enable radio email, either on HF, or on VHF/UHF. On VHF /UHF it would access a Winlink Gateway which would have RMS Packet software installed and running.

The hardware required for use with AirMail on VHF/UHF is any packet TNC or Sound Card. Sounds Cards and many TNC's require the additional installation of the "AMPE" and "AGW Packet Engine" softwares.

AirMail will work on HF very nicely, using short messages, with a Timewave PK232-MBX TNC, using Pactor 1. AirMail will work on HF certain Kantronics, Timewave, and MFJ TNC's. Best performance is obtained by using Pactor 2 or 3 with a TNC made by SCS. "RMS Pactor" Stations are gateways to the Winlink 2000 system on HF frequencies for users of pactor.

AirMail can be used to exchange messages with another ham station, which is also using AirMail, without using the internet. This is called "peer-to-peer". AirMail handles Attachments.

AirMail can also be configured to access the Winlink 2000 system directly, without using a radio, by using a "telnet" (Internet Access) connection.

AirMail uses a "handshaking" protocol, which results in a very fast and automatic transfer of emails to be Sent and Received, after being composed offline.

The minimum operating system is Windows 95. AirMail software is free.

### **Paalink (User software)**

This is a User program, used to do radio email on VHF/UHF (packet) or HF (pactor). It would access either a Winlink Gateway station (RMS Packet or RMS Pactor) or if an internet connection is available, directly to the Winlink email server. Paalink uses a fast and efficient "handshaking" protocol.

The hardware required for use with Paalink is most any TNC or Sound Card. Your regular email software (i.e., Outlook) is the user program which would be the Message Window, from which you would compose emails and do SENDS and RECEIVES, with Attachments.

Other needed software is .NET Framework 1.0 (or 1.1) and 2.0 (or later.) You need both; 2.0 is not a replacement for 1.0. Both are available free from Microsoft.

Depending on your TNC, you may also need AGW Packet Engine software. AGWPE is a “middle-ware” program which functions between Paclink and the TNC device you have selected. There is a free version and a \$49 paid version.

The minimum operating system needed is Windows 2000. Paclink is free.

The predecessors of Paclink were Paclink AGW and Paclink MP (no longer supported).

### **RMS Express (User software)**

This is a User program, specifically written to handle the WINMOR protocol. It is used to do radio email on VHF/UHF (packet) or HF (pactor or WINMOR). It would access either a Winlink Gateway station (RMS Packet or RMS Pactor or RMS WINMOR) or if an internet connection is available, directly to the Winlink email server. The hardware required for use with RMS Express is most any TNC or Sound Card.

RMS Express has its own internal database of messages (In Box, Out Box, etc.) similar to what is used with AirMail. Attachments are supported.

System Requirements: 32 or 64 bit Windows OS (Win XP, Windows Vista, Windows 7 or Windows 2003 Server), or under Windows on the Mac using a VM engine or dual boot arrangement. Windows XP systems require Microsoft .NET v3.5 runtime installed. There are minimal CPU demands with the exception of WINMOR operation. The heavy DSP demands of WINMOR require a computer of at least 700 MHz Pentium/Celeron class and at least 512 Meg of memory. If multiple applications are running concurrently a faster computer and more RAM may be required.

### **RMS Packet (Gateway software....not needed by Users of the Winlink 2000 system)**

Software which is used by a VHF/UHF “Winlink Gateway” station, to enable VHF/UHF packet users to access the email part of the internet. It is NOT installed on the computer of the VHF/UHF packet user. It is installed on the computer of a ham who wants to act as a local gateway to the internet for local users who want to do radio email.

The “Winlink Gateway” does not have to be a 24/7 operation. It will work best if the station is located on a high local spot, and users can connect directly, however it will work fine, but slower, if accessed through a digipeater or node. It is recommended that the installation of a Winlink Gateway station (or stations) be your #1 priority for ARES/RACES implementation in your area. Multiple RMS Packet stations, operating on different frequencies, will provide additional through-put capability and redundancy.

The easiest option, of two, to create a Winlink Gateway, is to use the RMS Packet software directly with a Kantronics or MFJ TNC.

It will also work with most any brand of TNC or Sound Card, if used with the AGWPE “middle-ware” software.

The minimum operating system is Windows XP. RMS Packet software is free.

The predecessor to RMS Packet was “Telpac” (no longer supported).

### **RMS Relay (Gateway software....not needed by Users of the Winlink 2000 system)**

It is installed on the computer of a ham who wants to act as a local gateway to the internet for local users who want to do radio email. It is installed as a “not required” enhancement for RMS Packet.

RMS Relay is a special program that provides local store and forward message handling in emergency situations when no Internet access is available to connect to the WL2K email server.

It is normally used in conjunction with one or more instances of RMS Packet located on the same computer or local area network.

When WL2K email server access is available RMS Relay acts as a simple repeater forwarding all packets between a local VHF user and the email server. If the server becomes unreachable then RMS Relay intercepts connection requests and mimics the email server telnet port to provide access to a temporary local message database. When access to the email server is restored RMS Relay transfers all stored message to the email server and clears the local database.

RMS Relay also includes the ability to exchange messages with the WL2K email server using HF radio when Internet is not available.

The minimum operating system is Windows XP. RMS Relay software is free.

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All of the software mentioned can be downloaded or linked from [www.winlink.org](http://www.winlink.org)  
Much additional information about Winlink 2000 is also available from that website.

Much more detailed information regarding the various components of Winlink 2000 is described in a FAQ type file, available from:

[http://home.earthlink.net/~k7bfl/WL2K\\_FAQ.pdf](http://home.earthlink.net/~k7bfl/WL2K_FAQ.pdf)

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