

Setting Up a RMS Winlink Station

The Basics

The purpose of this bulletin is to introduce you to the need for additional Winlink Stations throughout the world and the first steps to set up your very own RMS Trimode Winlink Station. This bulletin was co-authored by Bob Rodgers (KC4TVO) and Ed Muesch (KC2HKU).

During my own circumnavigation (KC2HKU) I discovered significant Winlink worldwide areas unsupported by Winlink Stations. In some cases this was attributable to the lack of government support and/or approval and in others cases it was due to a lack of volunteers. The U.K, Ireland, Germany, France, Denmark, Finland, Turkey, and the South Pacific lack the availability of stations. The entire African Continent enjoys only three stations all located in South Africa.

There exists today many retired sailors and voyager's who have returned to a conventional lifestyle, but continue to have an interest in supporting the wider sailing and traveling community. Many still hold an Amateur Radio General License. The purpose of this bulletin is to demonstrate one way that Amateur Radio Operators can continue to contribute to the sailing and traveling lifestyle in an important way.

First Edition April 15, 2014

F/n: WinlinkBulletin.4.15.14

Because of the dynamic nature of the internet, any web address or links associated in this bulletin may have changed since publication, and may no longer be valid.

No rights are reserved by the co-authors, R. Rodgers or L. E. Muesch. Any and all parts of this bulletin may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, recording or otherwise, with the hereby given permission of the co-authors.

Introducing the Winlink Hybrid Network

“Winlink 2000 (WL2K) is a worldwide system of volunteer sysops, radio stations and network assets supporting e-mail by radio, with non-commercial links to internet e-mail. These resources come from Amateur Radio, the Military Auxiliary Radio System (MARS), government agencies, and non-government volunteer organizations. The system provides valuable service to emergency communicators and to licensed radio operators without access to the internet. The all-volunteer Winlink Development Team (WDT) is committed to continuous improvement using modern computer technology with the most effective radio modes and digital protocols for local, regional and long-distance applications.”

“Winlink 2000 is an all-volunteer, non-profit project of the [Amateur Radio Safety Foundation, Inc. \(ARSFI\)](#). Winlink 2000 exists only through the work of generous amateur radio operators around the world and through donations to ARSFI by our users and supporters.”

“With the release of RMS Relay version 3.0.0.0 on November 4, 2013, the Amateur Radio Safety Foundation introduced the Winlink Hybrid Radio Email Network. This new network design marks a major milestone in Winlink's evolution with higher reliability, performance and utility for emergency communications. The new generation Winlink system now conforms to US Department of Defense Instruction (DODI 4650.02) for radio-only message transfer without the use of the internet. The Winlink Development Team urges HF sysops to upgrade their RMS station software (see below) to become fully functional in the new system. Including RMS Relay in a gateway's configuration improves the station's reliability for users.”

“The new design combines the best of Winlink's current forwarding system and the fault-proof features of a completely stand-alone, radio-only message forwarding system. The new design takes advantage of the speed and other benefits of the Internet when it's available, but also provides end-to-end email transport and delivery for system users if the Internet is down--or even if it completely disappears everywhere. It does this transparently, and routes messages automatically from sender to recipient without much adaptation by users, except that they must use software that supports the new design to realize these advanced features. The new design fully supports older user software like Airmail without compromise to past performance or capability. Users can switch to RMS Express client software to gain the advantages of the Hybrid Network design.”

“The new design is the work of Phil Sherrod, W4PHS. Along with the support of WDT developers, a crowd of Winlink users and both ham and MARS sysops, Phil designed, coded and tested new versions of RMS Relay and RMS Express, where most changes have been made. The new system has been in intensive development and testing among 43 RMS since 2013 began. <http://www.winlink.org/> website of the Winlink 2000 Radio Email System.”¹

1

“Introducing the Winlink Hybrid Network” written by the Winlink Development Team and published on their website: <http://www.winlink.org/HybridNetwork>.

Who Can Become a RMS Trimode Radio Station Operator?

- The applicant must hold a General Class Ham License or higher.
- The Winlink Development Team prefers applicants first have at least one to two years active experience using Pactor.
- A full and comprehensive understanding of the requirements for running a Pactor Station.

RMS radio Station Commitment

There are several minimal requirements to consider before making a commitment to the setting up and operation of a RMS Trimode Pactor Winlink Station. Some of these requirements are as follows:

- Commit to a 24/7 station operation.*
- Secure all necessary equipment dedicated to the full time 24/7 operation of the station.*
- Station must be up and running during adverse conditions, IE. Power interruptions, severe weather, and disasters of a emergency nature.*

How Do I Know If A New Station Is Needed In My Area?

There's only one sure way to find out. Contact Steve Waterman (K4CJX) of the Winlink Development Team. Although the U.S. has forty-three Pactor Stations these are

disproportionately located throughout the U.S. Most of these stations are located on the east and west coasts. When I began my station, KC2HKU in western North Carolina there was already a Winlink Station located twenty miles away. The other station, KC4TVO transferred two of his four frequencies to me thereby increasing the chance of a connection for people attempting to connect with a Pactor Station. The other station, KC4TVO (Operator Bob Rodgers) provided most of the expertise and know how in helping me to establish this station. If you have an interest in establishing and running a Pactor Station don't discount the need because of other stations in your area.

During my own circumnavigation I found significant areas unsupported. In some cases this can be an issue of the lack of government support and/or approval and in other cases there is a lack of volunteers to name but a few. The U.K, Ireland, Germany, France, Denmark, Finland, Turkey, and the South Pacific Ocean lack any stations. The entire African Continent enjoys only three stations located in South Africa,

Minimum New Equipment Costs

Estimated Costs, April, 2014

30 Amp Switching Power Supply (MFJ-4230MVP)	\$ 100.
200 watt Auto Antenna Tuner (MFJ-929 or LDG AT200Pro).....	199.
Icom HF Transceiver (IC-718 with data port)	590.
<i>Pactor Modem</i>	
* P3 (ICS Pactor	\$1,150..... 1150.
* P4 (ICS Pactor	\$1,500.
Dedicated Desktop or Laptop, Windows 7 minimum (rebuilt)	300.
Dipole Antenna	42.
Coax Cable & Fittings	90.
<i>Specialized radio cables:</i>	
1. Audio/Power cable, SCS 8 pin DIN to 13 pin DIN	35.
2. Trans. Freq. Cont. Cable, 13 pin DIN to mini 3.5mm phone plug.....	26.
3. Icom USB CT-17 FTDI Audio-Video-Voice-Data-Pwr.	23.
4. Grounding & no. 6 copper wire	25.
9. Grounding Rod & #6 copper wire	25.
TOTAL ESTIMATED STATION COST	<u>\$2,580.</u>

NOTES:

- A. * 4.1, 4.2, Check to determine if you qualify for a special Pactor modem discount.
- B. Item no's 1,2,3,6 & 7 were purchased at a local Ham-fest to take advantage of vendor discounts.
- C. Item no. 3 (HF Transceiver) was purchased through Ham Radio Outlet because of best cost.
- D. It was my personal experience that the lowest price of new equipment with warranty didn't justify the purchase of used equipment lacking warranty. However, used equipment will reduce capital investment costs.



Radio Shack

Upper Shelf – Winlink Station
Lower Shelf – Amateur Radio



Winlink Station

Equipment Compactness and Space Requirements

Space Requirements as shown in the authors RMS Winlink Amateur Radio Workstation.

Shelf size: 24 inches wide X 10 inches high X 14 inches deep.