Winlink 2000

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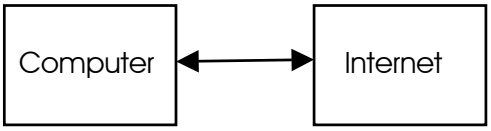
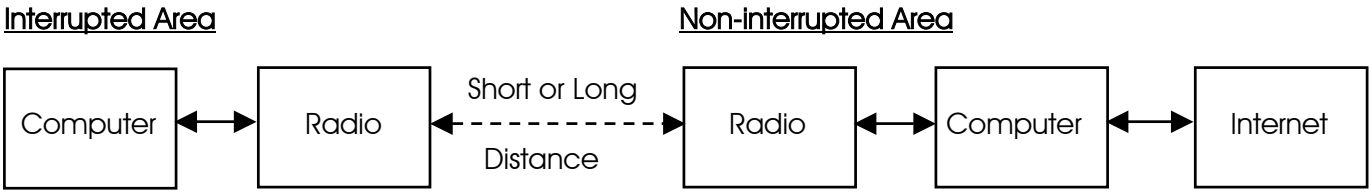
Normal E-Mail Internet Connection:



Using Radio Communications During an Interrupted E-Mail Internet Connection:



(UHF/VHF for Short Distance)
(HF for Long Distance)

Winlink 2000 is a worldwide digital amateur radio message transfer system. It provides E-mail transfer with attachments, map & text-based position reporting, graphic & text-based weather bulletin services, and emergency communications by linking radios to the Internet.

The Winlink 2000 system is currently being utilized for emergency communications where local or regional communications are disrupted, including the loss of the Internet, and where accuracy of information is important.

Winlink 2000 can be used by any licensed Amateur radio operator. The operator logs into one of the participating network stations using the "AirMail" software. Currently, Winlink 2000 has a flow of over 150,000 messages monthly into 41 participating stations from 5100 + users. The Winlink 2000 user must have a General Class or higher license to use HF radio.

Winlink 2000 may be very useful for emergency communications using the Telpac with Paclink email-based VHF/UHF radio Packet for "last mile" communications coverage. Airmail is used for greater distances using the HF radio link to Winlink 2000 and the internet.

"Telpac" stands for TELnet-PACket Bridge and it allows the Winlink 2000 operator to use the VHF/UHF Packet mode with the B2F protocol. Telpac is used by the Packet nodes to interface with the end-user, who is using Paclink or Airmail. Paclink utilizes Outlook or Outlook Express to provide the end-user with a connection to the Winlink 2000 system by way of Telpac.

PACTOR is an HF (3 to 30 MHz.) radio teletype mode developed in Germany by Ulrich Strate (DF4KV) and Hans-Peter Helfert (DL6MAA) to improve on inefficient modes such as AMTOR/SITOR and Packet-Radio (AX.25) in weak short wave conditions. PACTOR offers a much better error correction

system, and a considerably higher data transfer rate, than AMTOR/SITOR and result in a protocol much more resistant to interference than Packet-Radio under poor propagation conditions. For the first time in amateur radio, online data compression is used to increase the effective transmission speed. Pactor I is capable of 200 bps. PACTOR II is capable of 800 bps. PACTOR III is capable of 3600 bps. To use PACTOR, a PACTOR TNC/Modem is used in place of a packet TNC and HF frequencies are used.

The dial (transmit) frequency is 1,500 KHz lower than the center frequency.

Current PACTOR nodes in the United States:

AB7AA - Bill in Waikiki Beach, Oahu, Hawaii, Scan Center Frequencies
3641.9, 7103.7(P3), 10142.7(P3), 14064.4, 14109.2(P3), 18104.9, 18106.2(P3)

AH6QK - Richard in Kaneohe, Oahu, Hawaii, Scan Center Frequencies:
7070.9, 10126.9, 14069.0, 14110(P3), 18101.9

KA6IQA - Tom in Rancho Santa Fe, California, Scan Center Frequencies:
7066.9, 7101.2(P3), 14112.4, 14104.2(P3)
18102.9, 18106.7(P3), (13:00 to 03:00 UTC)

KB6YNO, Hamilton, Massachusetts, Scan Center Frequencies:
7069.9, 10125.9, 14067.9, 14094.9 (P3), 18098.9

KF6NPC - Mike in Riverside County, CA., Scan Center Frequencies:
3621.2, 7067.9, 7103.7, (P3), 10146.2 (P3), 14096.0 (P3)
VHF 1200 baud packet frequency for KF6NPC: 145.07

KN6KB - Rick in Rockledge, Florida, Scan Center Frequencies :
7068.9, 7103.7(P3), 10146.2(P3), 14066.4

KQ4ET – Joel, Virginia Beach, VA, Scan Center Frequencies:
3628.7, 7067.9, 10146.5(P3), 14110.0(P3)

K4CJX - Steve in Nashville, Tennessee, K4CJX Center Scan Frequencies :
Station # 1: 7076.9 (P2), 7101.2 (P3), 14076.9 (P2), 14106.7(P3)
Station # 2: 10123.9 (P2), 10141.2(P3)
Station # 3: 18103.9 (P2), 18108.7(P3)

K4SET - Scott in Murray, Kentucky, Scan Center Frequencies:
7074.9, 7103.7(P3), 10,136.9, 10143.4(P3), 21073.9, 21095.2 (P3)

K6CYC - Scott in Los Angeles, California, Scan Center Frequencies:
7069.9, 10123.9, 10143.7# - Omni-directional
21068.9, 21096.2(P3), 14068.9, 14102.7(P3) - Beaming South Pacific

W7IJ - Bill in Spanway, WA, Scan Center Frequencies:
Station 1: 3631.9(P3), 7068.9(P2), 7103.7 (P3), 10139.5 (P2)
Station 2: 14069.4(P2), 14110.0 (P3), 21077.9 (P2), 21091.2 (P2)

K6IXA - Grady in Atwater, California, Scan Center Frequencies:
Station # 1: 10122.9, 10143.7(P3)
Station # 2: 14064.9, 14102.7(P3)

K7AAE - Ronald in Woodinville, Washington, Scan Center Frequencies:
Station # 1: 3629.9, 7076.9, 10133.9, 10145.7(P3)
Station # 2: 14067.9, 14109.2(P3)

N8PGR, North Royalton, Ohio (20 miles south of downtown Cleveland and lake Erie)
Scan Center Frequencies: 3621.9, 7071.9, 10140.4, 14117.9

N0IA - bud in Deltona, Florida, Scan Center Frequencies:
3626.9, 7072.9, 10133.9, 14072.9, 14098.7(P3), 18106.2(P3)

WA2DXQ - Dave in Ft. Lauderdale, Florida

WB5KSD - Jon in Farmersville, Texas, Scan Center Frequencies:
7075.9, 10132.9, 14078.9, 14109.2 (P3)

WB0TAX - Deni in Elm Grove, Louisiana, Scan Center Frequencies:
7103.7 (P3), 10133.9, 10143.7 (P3), 14066.9 (P2), 14096.2 (P3), 18106.2 (P3)

WD8DHF - Gary in Harker Heights, Texas, Scan Center Frequencies:
Station #1: 3590.9, 7075.4, 70103.7(P3), 10,127.9
Station #2: 14075.4, 14098.7(P3), 18075.4, 18107.9(P3)
Station # 3: 21075.4, 21091.2 (P3)

WU3V - Jim in Great Falls, MT, Scan Center Frequencies:
3631.2 (ALL), 7074.9, 7103.7(P3), 10126.9, 10143.4(P3), 14069, 14102.7(P3)

WX4J - Earl in Switzerland, Florida, Scan Center Frequencies:
3622.4, 3620.9(P3), 7066.9, 7065.4(P3), 10143.4, 10141.9(P3) 14066.9, 14065.4(P3)

W1ON, Bedford, Massachusetts (near Boston), Scan Center Frequencies:
3620.9, 7070.9, 14075.9, 14104.2 (P3), 18100.9

W6IM - Rod in San Diego, California, Scan Center frequencies:
Dipole - 7073.9, 10141.2(P3)
Beam (135 deg) - 14073.9, 14098.7(P3)

W7BO - John in Woodland, Washington, Scan Center Frequencies:
7.067.9, 7101.2(P3)

W9GSS, East Peoria, Illinois, Scan Center Frequencies:
7072.9, 14073.9, 14109.9 (P3), 21098.0 (P3)

W9MR, Keensburg, Illinois, Scan Center Frequencies:
7065.9, 10145.2 (P3), 14069.9, 14101.7 (P3)

Current PACTOR nodes in Canada:

VE6KBS - Karl in Calgary, Alberta, Center Scan Frequencies:
7096.0, 7096.5(P3), 14078.9, 14104.2(P3), 18100.9, 18106.2(P3), 21079.9, 21098.7(P3)

VE2AFQ - Andre in Montreal, VE2AFQ Scan Center Frequencies:
7073.9, 7101.4 #, 14068.9, 14109.9 #, Telpac: 145.070 MHz

VE1YZ - Neil near Halifax, Scan Center Frequencies:
7067.9, 10129.9, 10148.2(P3), 14111(P3), 14112.9

Airmail Software Protocols

Software: Download and install "Airmail" version 3.1.936 or later.

Address Book Setup

Main page
Click on the black book icon (second from left)
Click New
Name: person's name
To: Their email address
Email gate: Email
Post Via: WL2K
Click OK

Telnet Client Setup

Internet connection to this computer is required
Main page
Click on Modules
Click on Telnet Client
Click on the yellow shaking hands
Click on New
Place in the boxes
Remote Callsign: K4CJX
Remote Host: k4cjx.no-ip.com
Port: 12001
Timeout: 30
Local Callsign: your call
Password: WL2KTELNETCLIENT
Check B2
Click OK
You should see K4CJX in the window at the top of the Telnet Client now.
Click the green button/icon and if you are connected to the Internet it should make a connection with Steve and sign off automatically.

Formatting a New Message for Telnet

Main page
Click on white page icon (third from left)
Click on a name from your address book
Click OK
Type a message
Click on the small floppy disk icon (6th from the left to save it)
Click on the mailbox icon to post it (7th from the left to say it is ready to send)
Now, click on the Inbox (on the left, you should see a mailbox with a blue arrow and the message)

Sending a Message Through Telnet

Main page
Click on modules
Click on Telnet Client
Click on the green button and the message should go. Watch closely, it does not take long.

VHF Packet Client Setup

Main page
Tools
Options
Modules
VHF Packet Client - check the block and click on the Setup button
From the Connections column:
TNC Type: select the TNC you are using - KPC-3 is at the bottom of the list
Com Port: Select your computers serial com port (usually Com1)
Baud Rate: Select the serial port baud rate (usually 9600)
Do not make changes in the Port Settings column
Check Show Hints
Check Terminal Window and Telnet Client
Check Show in Taskbar for Terminal Window and for VHF Packet Client and Telnet Client
Click Apply at the bottom
Click OK
Close Airmail and restart it.
Note: you cannot program multiple connections. You need to connect directly with a Telpac node.

Formatting a New Message for VHF/UHF Packet

Main page
Click on white page icon (third from left)
Click on a name from your address book
Click OK
Type a message
Click on the small floppy disk icon (6th from the left to save it)
Click on the mailbox icon to post it (7th from the left to say it is ready to send)
Now, click on the Inbox (on the left, you should see a mailbox with a blue arrow and the message)

Sending a Message Through VHF/UHF Packet

Main page
Click on modules
Click on Packet Client
Connect To: Callsign of the Telpac Station
Connect As: Your callsign
Click on the green button and the message should go. Watch closely, it does not take long.

Sending a Message Through VHF/UHF Packet via Multiple Nodes

Main page
Click on modules
Click on Packet Client
Connect To: Callsign of the first packet station
Connect As: Your callsign
Click on the Handshaking icon (third from the left)
Click on the green button
Once connected to the first packet station, Click on the Keyboard Icon (fourth icon from the left)
Using the connect command (c) in the lower window (C Callsign) to connect to the next node
If you need the connect to more nodes, use the above step repeatedly until you come to the Telpac node

Once connected to the telpac node, click on the Handshaking icon (third from the left)
The message should go. It may take a long time depending upon the number of nodes used

HF Client Setup

Main page
Tools
Options
Connections
From the Modem (TNC) Connection column:
Modem type: select the modem you are using (PTC-IIex)
Com Port: select the com port you are using (usually Com1)
Baud Rate: Select the serial port baud rate (57600)
Center Frequency: 1500
Check USB
From the Modem (TNC) Connection column:
Select none if you do not have a remote control for your radio
Check Show Hints
Click Apply at the bottom
Click OK
Close Airmail and restart it.

Formatting a New Message for HF

Main page
Click on white page icon (third from left)
Click on a name from your address book
Click OK
Type a message
Click on the small floppy disk icon (6th from the left to save it)
Click on the mailbox icon to post it (7th from the left to say it is ready to send)
Now, click on the Inbox (on the left, you should see a mailbox with a blue arrow and the message)

Sending a Message Through HF

Main page
Click on modules
Click on HF Client
Connect To: Callsign of the PMBO Station
Connect As: Your callsign
Click on the green button and the message should go. Watch closely, it does not take long.

Note: the first you log onto an HF station, your callsign and license may need to be verified.