

# Weather Message

Retransmission

Version 3.6

Weather Alerting Software for your network.

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# Weather Message - EMWIN Retransmission

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### **Publisher**

*Weather Message Software*

### **Editor**

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### **Special thanks to:**

*All of the Weather Message users that have helped with the development of this software. I have listened carefully to your requests. Without your continued devotion, this version would not be possible.*

*Also to the people that make reporting and responding to severe weather a priority. Your dedication saves lives.*

### **Our Goal:**

*"To provide users with software that can help save lives. If one life is saved through our combined efforts the value is immeasurable."*

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**Part**



# 1 Introduction

Enter topic text here.

## 1.1 Overview

Weather Message - WxReTran is an EMWIN data retransmission program. It is used to retransmit EMWIN data on a VHF or UHF frequency using a radio modem.

WxReTran features 10 priority message queues, message discarding, message duplication and message scheduling. In addition, it can be used to compress single or multiple messages.

A standard RS-232 connection to an external radio modem is used to transmit the EMWIN data at 1200, 2400 or 9600 baud. Radio modems, suitable for EMWIN retransmission can be purchased at Tigertronics <http://tigertronics.com> or Zephyrus Electronics <http://big-z.com>. See Appendix B for specifications.

An appropriate radio transmitter and FCC license are required to broadcast the EMWIN data. NOAA currently has frequencies available for EMWIN retransmission. They are 163.300, 163.325, 163.350, 168.7125, and 168.8125 MHz. Contact your local Warning Coordination Meteorologist (WCM) for information on applying for a frequency.

Transmitters certified for use on the NOAA frequencies can be purchased from Skywarn Systems, Inc. For information and pricing, send email to Ray Bartik – [ray.bartik@skywarnsystems.com](mailto:ray.bartik@skywarnsystems.com).

Weather Message – WxBBSrvr is an EMWIN data retransmission program for the internet. It is used to serve EMWIN data to a private or public network.

Weather Message – WxRadar can be used to retrieve weather radar images for inclusion in your retransmission.

Weather Message - WxReTran can be downloaded from the Internet at <http://www.wxmesg.com>.



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## 1.2 Data Warning

### **Warning**

Due to the nature of the **EMWIN**, **Weather Wire**, and **NOAAPORT** data streams, it is possible, on rare occasions, for weather messages to be missed or not processed. This can be caused by

satellite black out, technical problems, weather conditions, poor Internet connections or corrupted messages. *Weather Message* makes deliberate attempts to process all received messages, even those that may have been corrupted. Because of this, the expiration times of some messages may be set to a default of 30 minutes or 72 hours. With any watch or warning, you should read the text of the message to validate the expiration time.

## 1.3 Obtaining Help

### Email Support

If you need help with Weather Message, send an email to [help@wxmesg.com](mailto:help@wxmesg.com).

### Mail Support

You can reach the program author by mail to Weather Message Software, 203 Old Shepard Road, Dadeville, Alabama 36853.

### Weather Message Website

You can check for software updates and information on the [Weather Message Website](#).

### Discussion Group

A Yahoo Discussion Group has also been established for users to exchange ideas and help each other. You can join this group at <http://groups.yahoo.com/group/WxMesg/join>.

## 1.4 Installation

Weather Message Retransmission can be purchased on CD or downloaded from the website. The CD will automatically load the installation program. If you download the software from the Internet, you will need the full installation executable. It contains all of the files necessary for a full installation.

Updates to the software can also be downloaded from the Internet. The program updates only contain changes to the Weather Message programs. It cannot be used for a full installation.

Weather Message Retransmission can be uninstalled using the standard Windows Add/Remove Programs facility. The uninstaller will not delete files created while running Weather Message. After uninstalling the software, you can safely remove the WxMesgNet directory.

**Note:** *If your installation will use multiple user login names/profiles, we recommend that you install Weather Message using the administrator login. This will insure that all users have access to the programs.*

**Note:** *It is not necessary to uninstall a previous version of Weather Message Retransmission before installing an updated software version. Uninstalling the software will delete your operating setup information.*



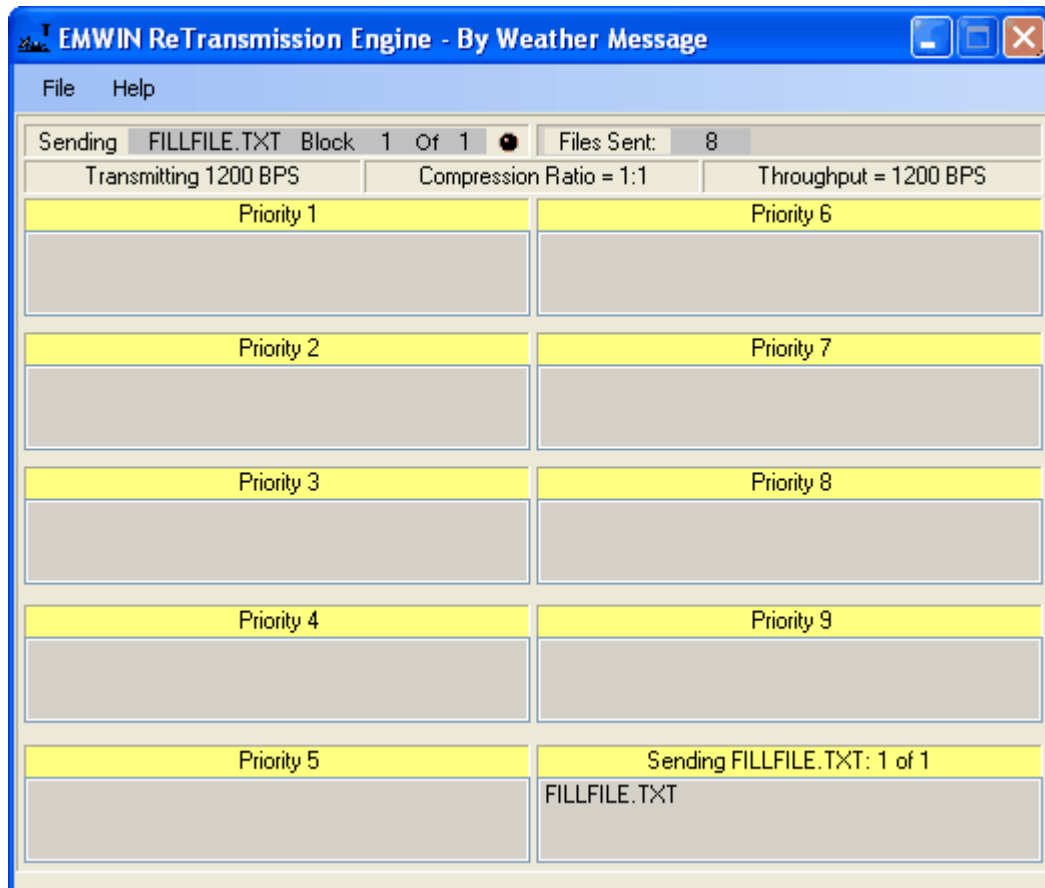
**Part**



## 2 WxReTran - Serial Port Retransmission

### 2.1 Overview

WxReTran is used to retransmit EMWIN data using a modem connected to a VHF or UHF radio.



The main screen shows the status of each queue. WxReTran operates continuously sending received weather messages. In the event that no messages are available, the filler file, FillFile.txt, will be sent.

If your transmitting speed is slower than 9600 baud, you should use caution when selecting files for retransmission. At 1200 baud, you can only send a fraction of the files that are being transmitted by NOAA. The system log file, RtLog.txt, or Queue Status screen can be reviewed to determine if you are overloading your system.

Every six hours, the system writes statistics about program operation. These statistics will let you know how many files have been sent, the number of filler files that have been sent and the maximum number of files that had to wait in each queue. These statistics are reset at midnight.

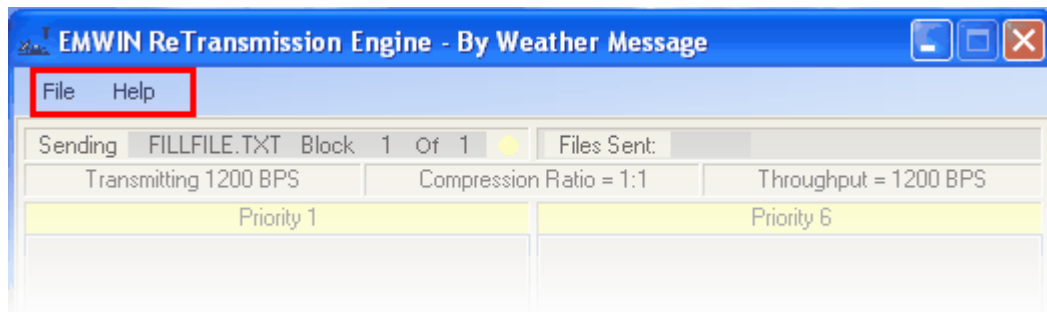
The log file may also contain other messages. An entry will be made in the log file each time a message is overwritten. In addition, any files that have not been transmitted before the user specified purge-time, will be recorded.

You should review the log file periodically to see if your system is overload. When the log file reaches 100,000 bytes, it is copied to RtLog.old and a new log file is created.

Messages that are received for processing are listed in their respective priority queue on the screen. If you want to remove a file from the current queue, select the file and press the delete key. Note: You cannot remove a message that is currently being transmitted.

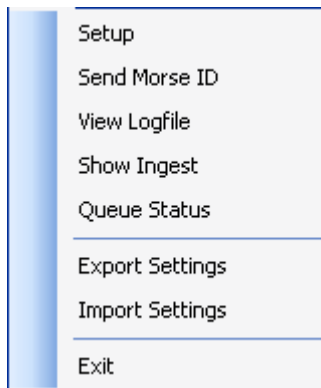
**Note:** If WxReTran is stopped with the window minimized, the next time it is started, it will start minimized.

## 2.2 Menu Options



The menu buttons on this screen perform these functions:

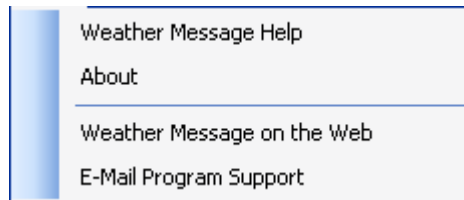
The **File** menu allows you to export and import the program registry values, print the alarm and group settings and exit the program.



- The **Setup** option displays the [setup window](#).
- The **Send Morse ID** causes the program to send morse code identification to the modem.
- The **View Logfile** displays the log file in notepad.
- The **Show Ingest** option shows the main window of each ingest program running the background.
- The Queue Status option displays the [queue status window](#).
- The **Export Settings** option will export all of the registry settings for the Weather Message programs. They are exported to WxRegSet.txt. This allows a user to easily backup the weather message directory and save all of their settings.
- The **Import Settings** option will import the registry settings contained in the WxRegSet.txt file.

- The **Exit** option exits the program.

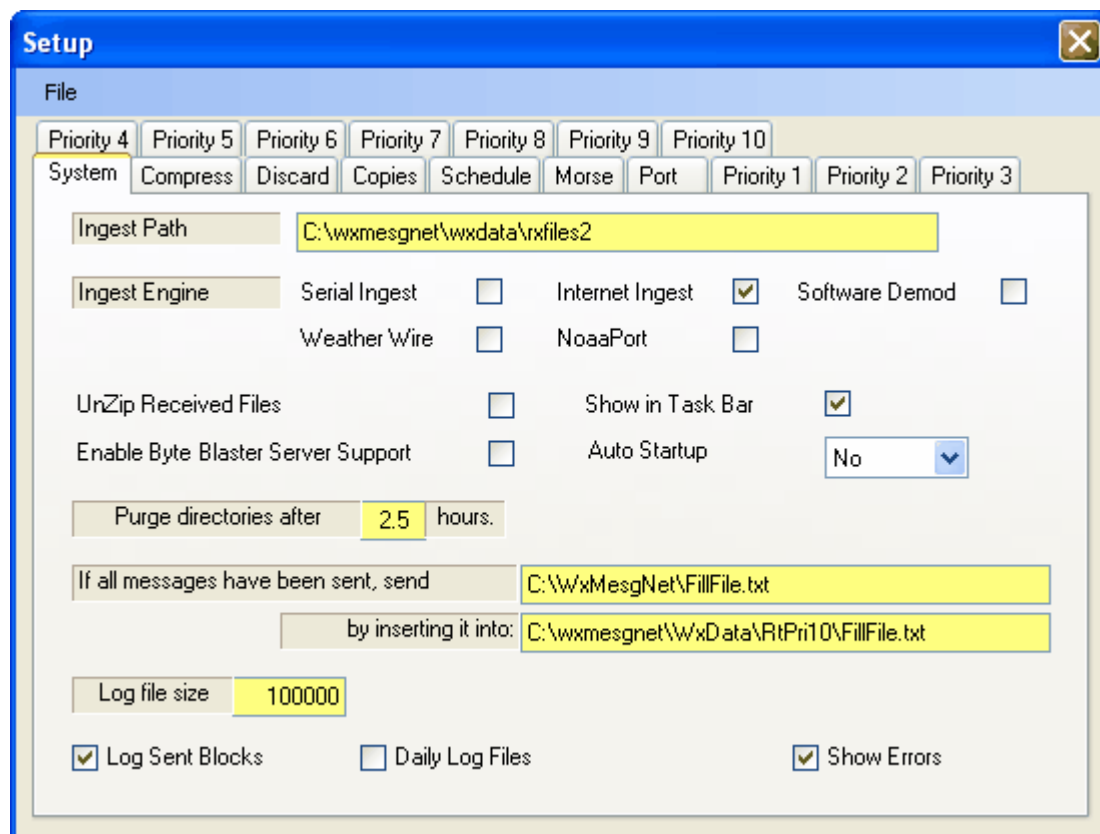
The **Help** menu allows you to see this manual, and display information about the program.



## 2.3 Setup

### 2.3.1 System Tab

The System Tab is used to setup general program operating information.



**Ingest Path** – The directory that will contain the received files to be processed by WxRetran.

**Ingest Engine** – Select Serial Ingest for the serial port engine, Internet Ingest for the Internet engine, Software Demodulator for the software demodulator engine, Weather Wire for the weather wire engine, or NOAAPORT for the NOAAPORT engine.

**UnZip Received Files** – Check this box if you want compressed files to be unzipped before they are processed by WxReTran.

**Enable Byte Blaster Server Support** – Check this box if you want WxReTran to send data to WxBBSrvr (byte blaster server) for processing. (This allows for an Internet backup of your retransmission data.)

The **Show in Task Bar** option, when checked, will move the program from the system tray to the task bar.

The **Auto Startup** option allows you to specify whether WxReTran is automatically started when Windows starts. The options are No; Yes, for the current user; and Everyone, for any user.

**Note:** *The options available for **Auto Startup** are based on your user permissions. Administrator and Power users will have all of the options. Other users may only have the Yes option.*

**Purge directories after** – Enter the amount of time, in hours, that the system should purge the directories used by the retransmission program. Note: Messages that have been queued, but not sent, will be purged after this amount of time.

**If all message have been sent, send** – Enter the name of the file to be sent when WxReTran does not have any weather messages to send. The system defaults to "FillFile.txt". The file is located in the WxMesg directory and can be edited to contain your local information.

**Insert into** – Enter the priority directory name and file name that this file should be copied. The filler file is normally copied to the \WxMesg\WxData\RtPri10 directory. Remember to put the file name on the destination path.

**Log File Size** – Enter the log file size in bytes.

**Log Sent Blocks** – Check this box to log all of the weather messages sent and the times that the morse identification is sent.

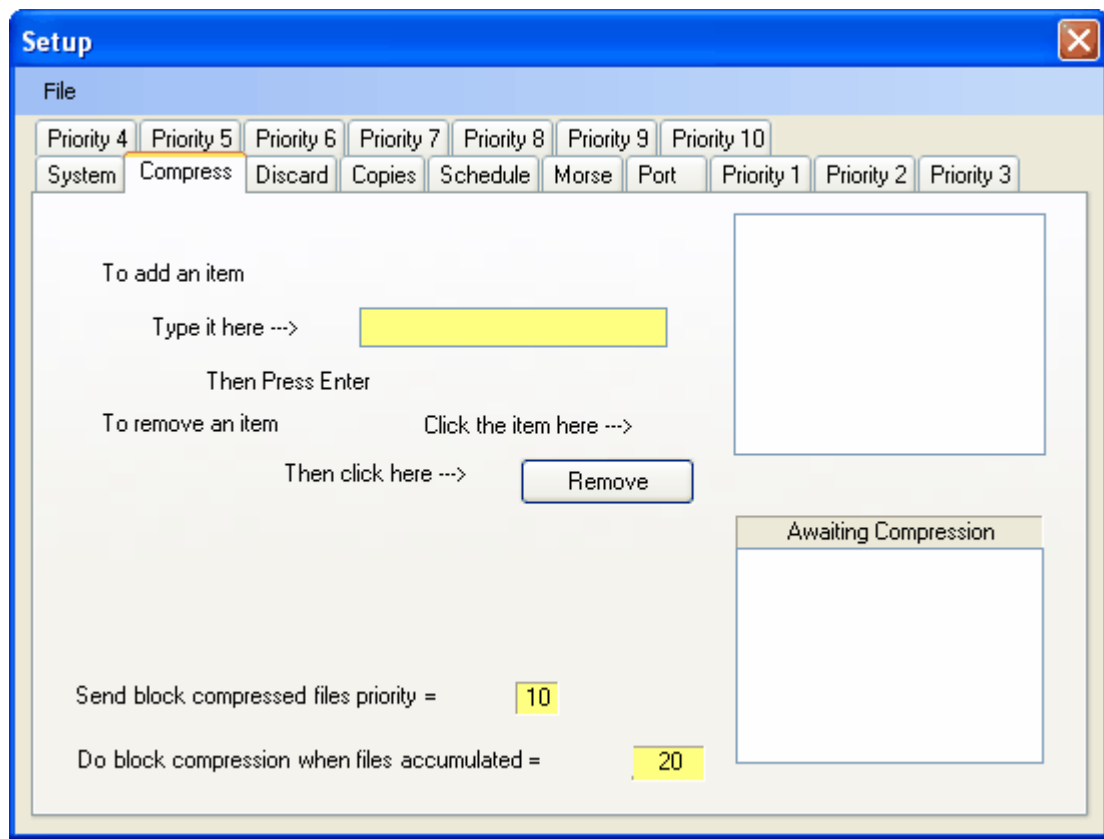
**Daily Log File** – Check this box to store log files for each day in the ..\WxMesg\WxLogs directory. The logs for each day are copied to this directory. The log file name is appended with the day number. These logs will be overwritten with the next month's logs. After enabling this option, you must restart all Weather Message programs.

**Note:** *Enabling this option disables the log file size option.*

**Show Errors** – Check this box to have the program pop-up error conditions as they occur. Regardless of this setting, the program will write all errors to the log file.

### 2.3.2 Compress Tab

The Compress Tab is used to specify a group of files that should be compressed as a group before being transmitted.



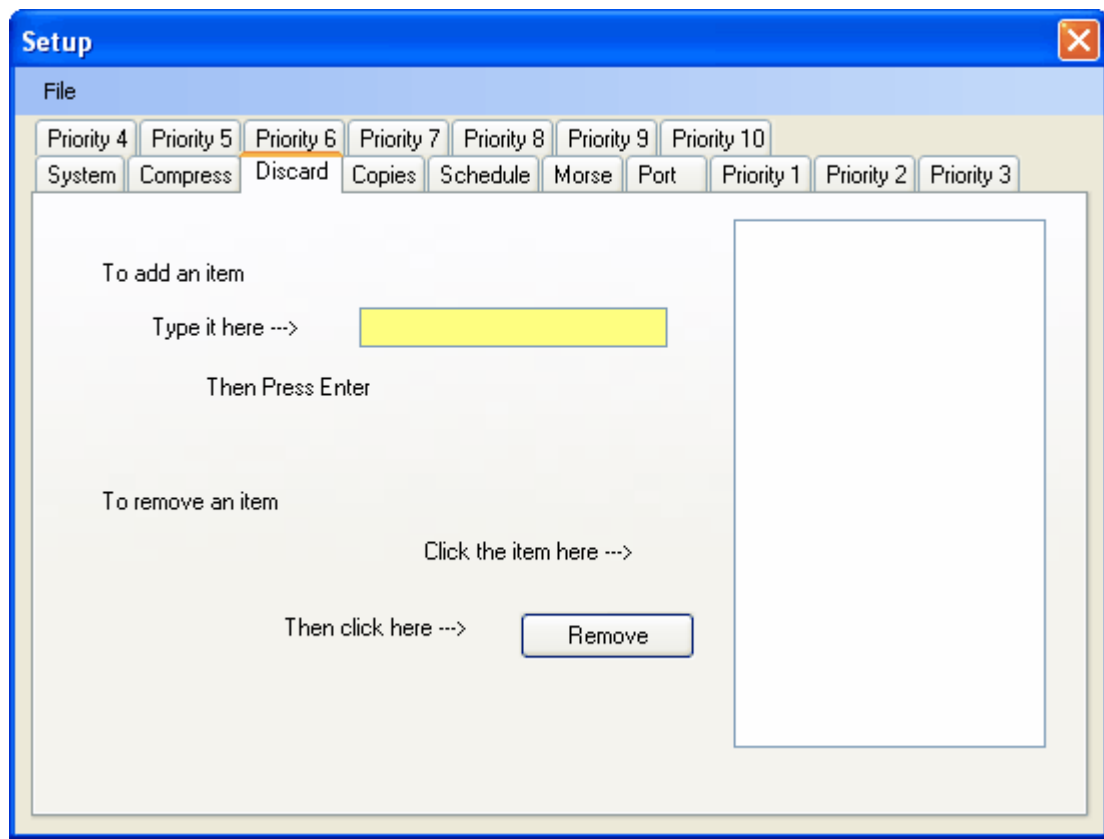
To add items to the compress queue, enter the weather message file name in the Type it here box and press enter. The file name will appear in the list box. You can use the wild card character ? to match any character in the received file name. The program requires that you enter at least two alpha characters.

The **Send block compressed files priority** field is used to enter the priority queue that will be used to send the files after they are compressed.

The **Do block compression when files accumulated** = is used to enter the number of files that should be received before compressing the files for transmission.

### 2.3.3 Discard Tab

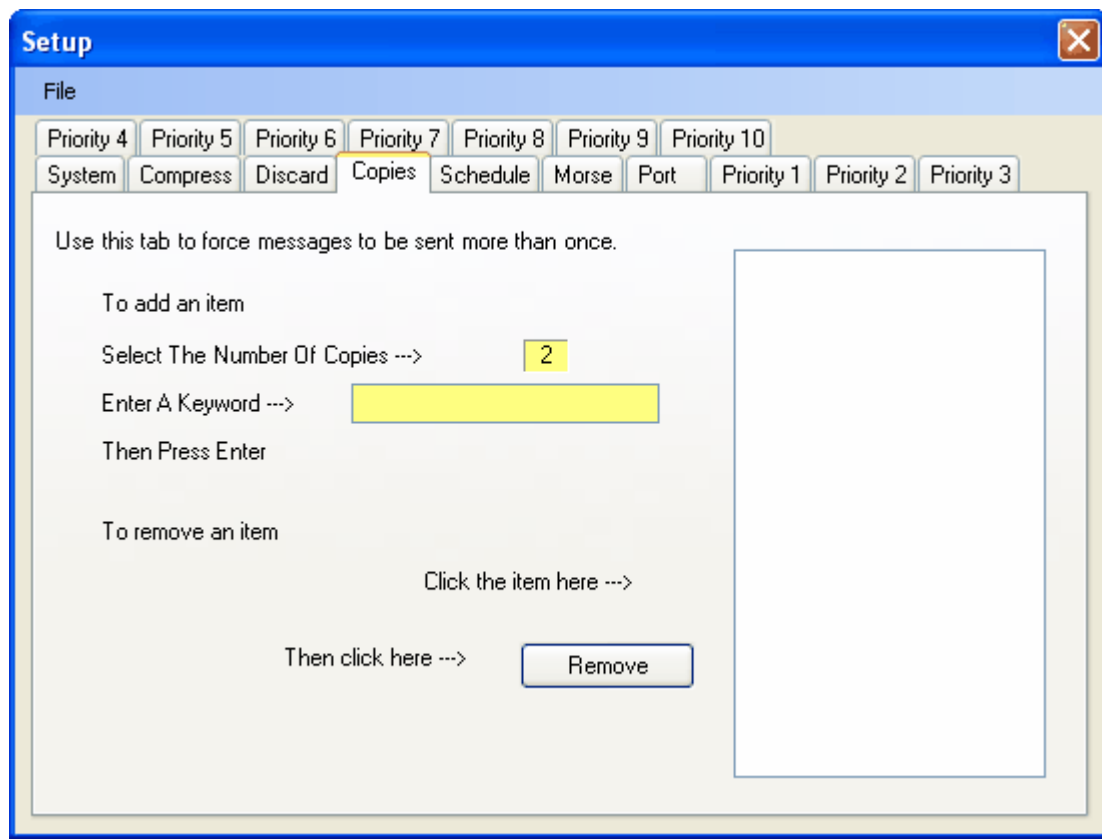
The Discard Tab is used to enter the file names for messages that you do not want sent.



By default, WxReTran will discard all files that do not match any of the priority or compression queues. You however, can use this tab to catch specific files before they are processed by the priority or compression queues.

### 2.3.4 Copies Tab

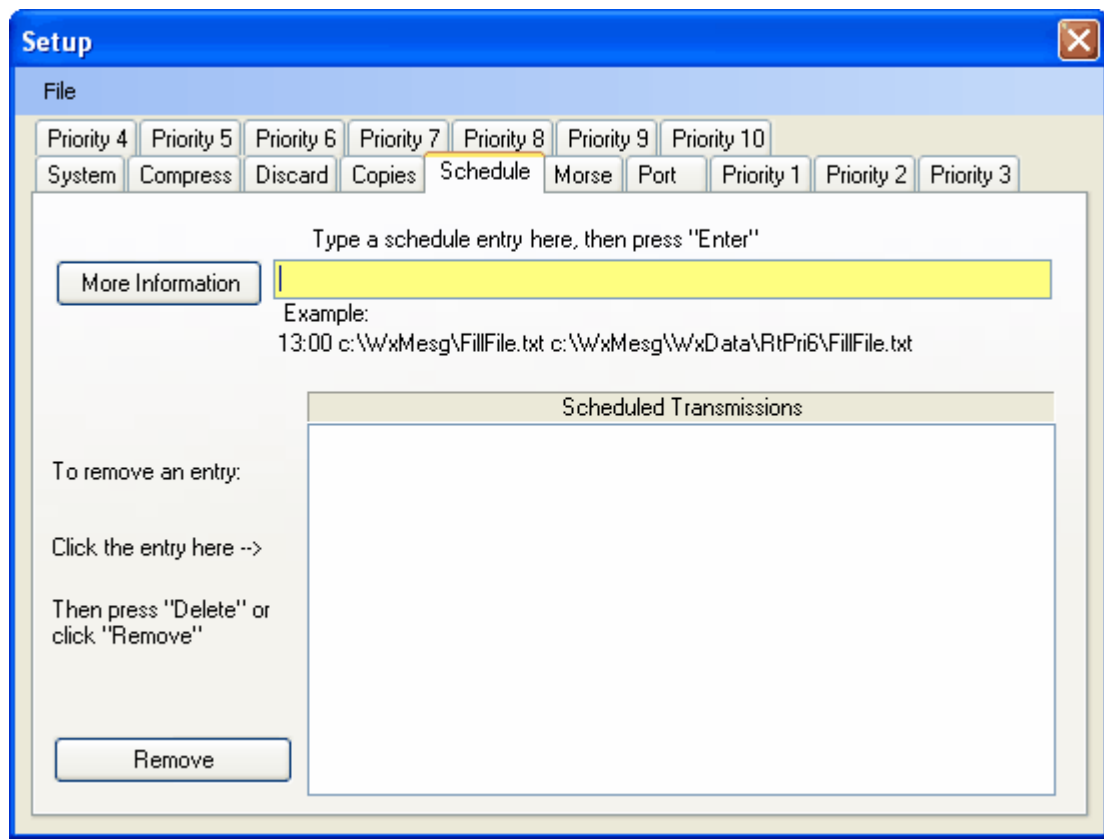
The Copies Tab is used to setup message files that are to be transmitted more than once.



If you want to send a weather message more than once, enter the number of copies in the **Select The Number of Copies** field. Enter the file name in the **Enter a Keyword** field and press enter. When the entered file name is received, it will be duplicated the number of times you specify. You can duplicate a file up to 9 times.

### 2.3.5 Schedule Tab

The Schedule Tab is used to automatically insert an external message file into a priority queue.

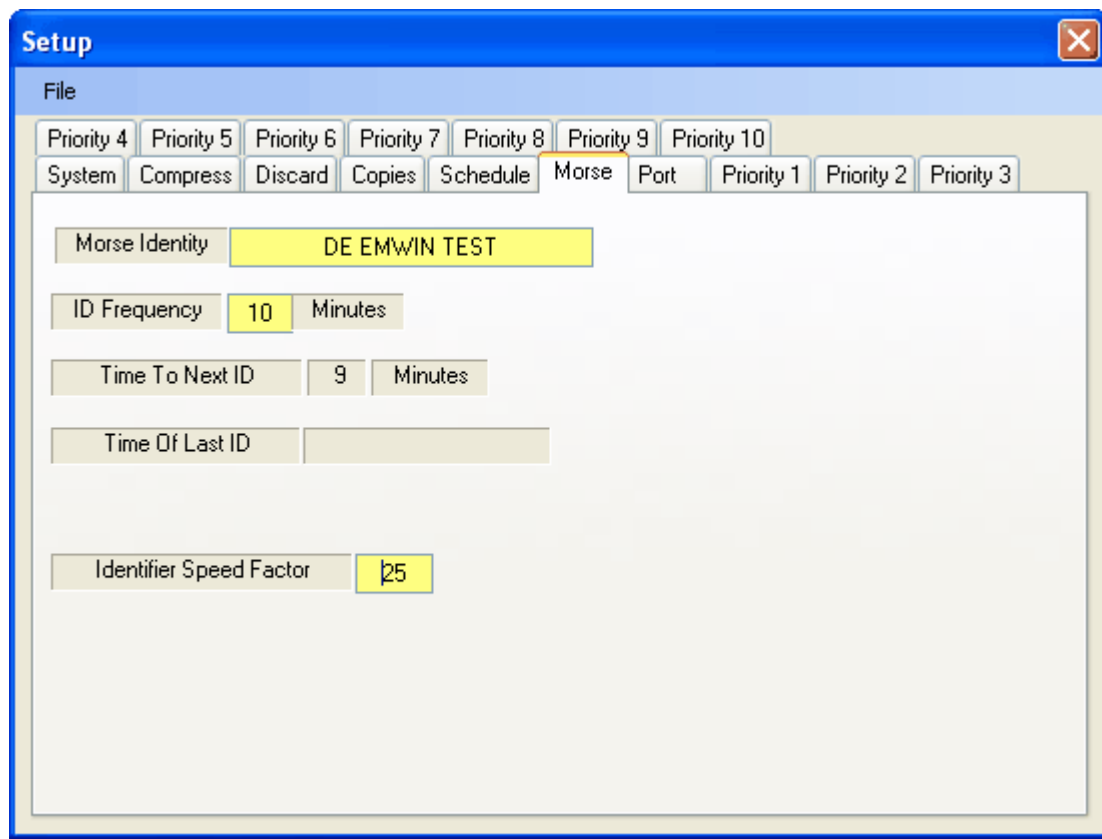


Using the example provided on the screen, enter the time that the message should be sent, in military time format. Followed by a space, then the source path and file name, followed by a space and the priority queue path and file name. After entering the schedule, press enter to place it in the scheduled transmissions list.

To delete multiple items from the list, select all of the items to be deleted and press the delete key.

### 2.3.6 Morse Tab

The Morse Tab is used to setup your morse code call sign (identification).



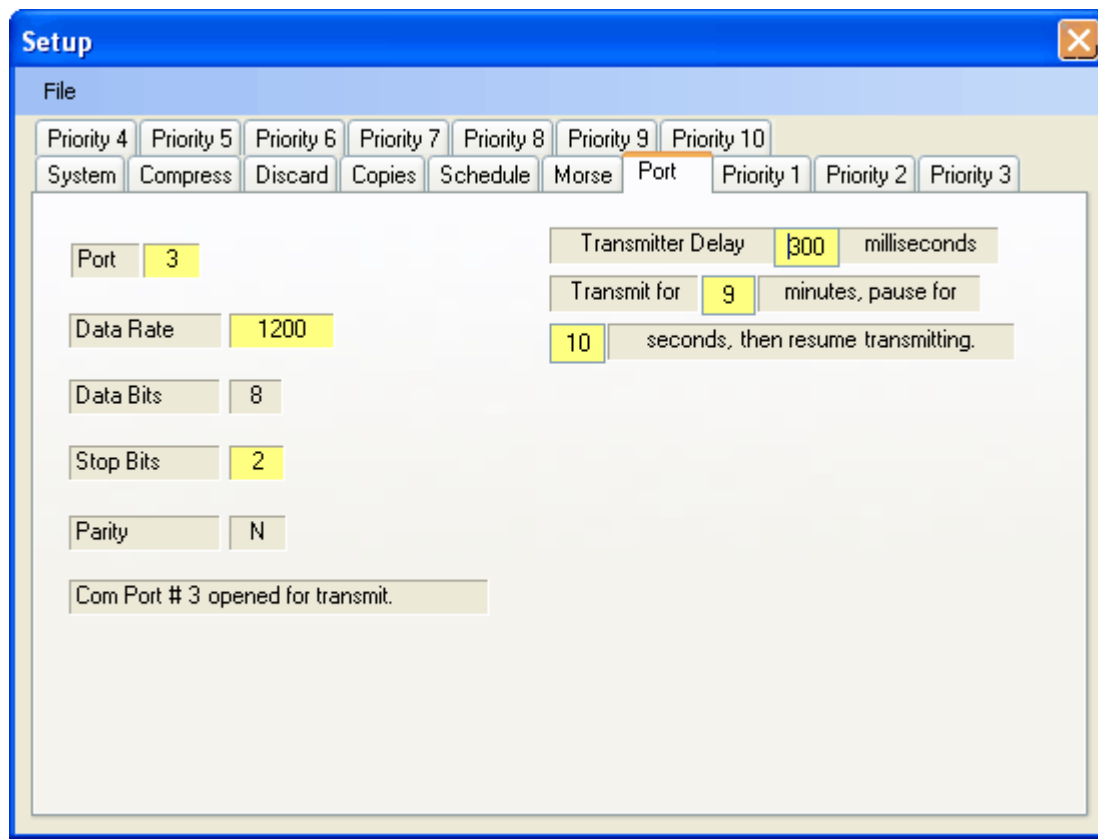
**Morse Identify** – Enter your FCC issued call sign. If you don't require identification, leave this field blank.

**ID Frequency** – Enter the length of time you are required to send your call sign. This normally is 15 minutes for a business band frequency or 30 minutes for public safety. If you are in-doubt, check with your local two-radio dealer.

**Identifier Speed** – This field is the morse code speed factor. The default of 25 results in 20 word-per-minute morse code. You can increase or decrease this factor to change the speed.

### 2.3.7 Port Tab

The Port Tab is used to setup the comm port that is attached to your radio modem.



**Port** – Click on the port field to change the comm port. Selecting Port 0 (zero) will disable the sending of data through the comm port.

**Note:** *Selecting Port 0 (zero) may be desirable if you will only be using WxReTran to feed a private byte blaster server.*

**Data Rate** – Click on the data rate field to change the data rate.

The **Data Bits**, **Stop Bits** and **Parity** cannot be changed with the setup program. If you need a different configuration, send an email to [help@wxmesg.com](mailto:help@wxmesg.com)

**Transmitter Delay** – Enter the time, in milliseconds, required to key up your transmitter.

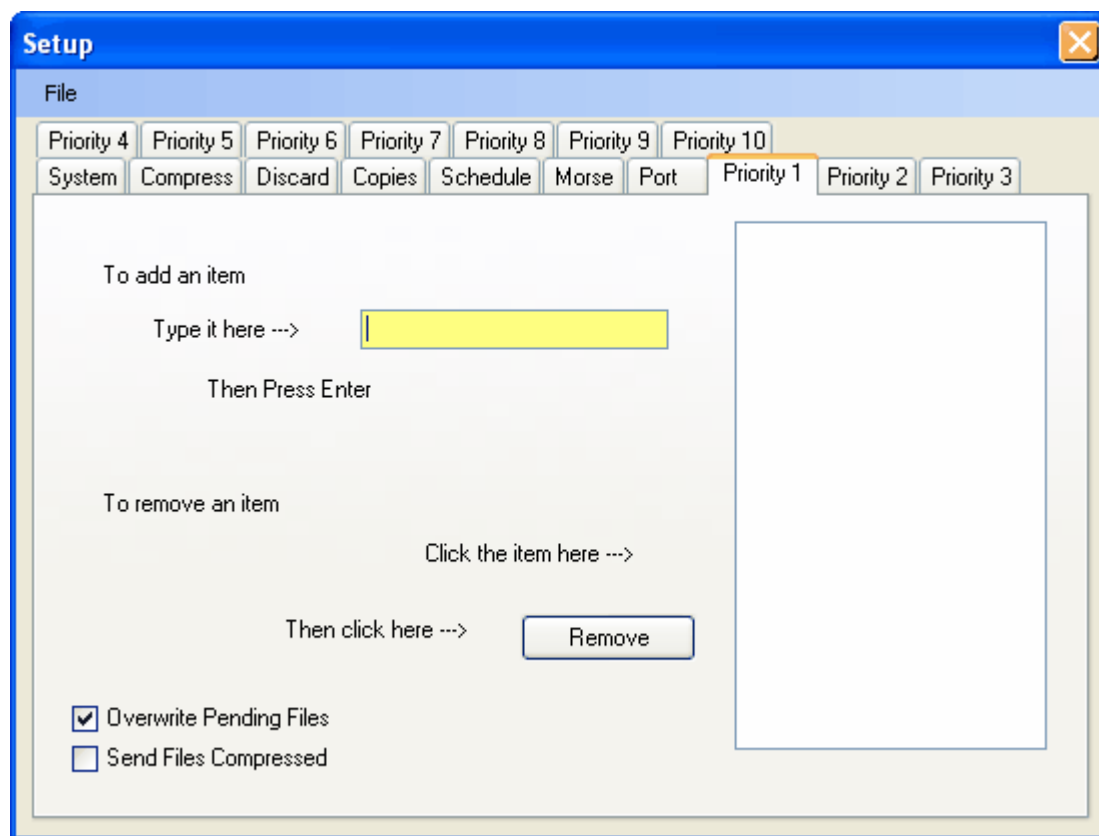
**Transmit For** – These fields are used when you don't have a continuous duty transmitter. You can specify the number of minutes to transmit and the number of seconds to pause the transmitter. If you have a continuous duty transmitter, sent the "Transmit For" field to 0 (zero). See Appendix B for information on continuous duty.

### 2.3.8 Priority Tab

There are 10 Priority Tabs. The highest priority is 1 and the lowest 10. Each Tab operates the same. You will need to determine the priority of the weather messages that you intend to retransmit.

For example, Tornado Warnings, Severe Thunderstorm Warning, Flood Warnings, etc. are normally assigned to Priority 1. Watch products can be assigned to Priority 2. You can use the

remaining priority queues for other weather products. Graphic files can be assigned to the lowest Priority 10.



To add items to this priority queue, enter the weather message file name in the Type it here box and press enter. The file name will appear in the list box. You can use the wild card character ? to match any single character in the received file name. The wild card character \* can be used to match multiple characters in the received file name. The program requires that you enter at least two alpha characters.

For example, to send all messages from Alabama Priority 3, add ?????AL.TXT to the list on Priority tab 3. To send all weather roundups for Alabama priority 2, add RWR???AL.TXT to the list on Priority tab 2. To send tornado warnings for Alabama Priority 1, add TOR???AL.TXT to the list on Priority tab 1.

Graphic products can be included by adding ???????.JPG and ???????.GIF to Priority tab following your text products.

To remove a file from the list, click on the item and then click on the **Remove** button. The file will be removed from the list and will no longer be processed.

The **Overwrite Pending Files** option, if checked, tells the program to overwrite a pending file with a newer file, of the same name. This option can be used with a priority queue that will process graphics files. If a graphics file is waiting to be sent and a newer file arrives, the older file will be overwritten by the newer file. Note: This option should not be used with weather text files. It can cause messages with the same name to be overwritten, even though the message may contain different weather text.

The **Send Files Compressed** option allows you to specify if you want the files received in this

queue to be compressed before they are sent. Note: Compression of single files does not usually result in a lot of savings for some file formats. The Compress tab can be used to compress a group of files, which normally results in more savings.

## 2.4 Adding Local Data

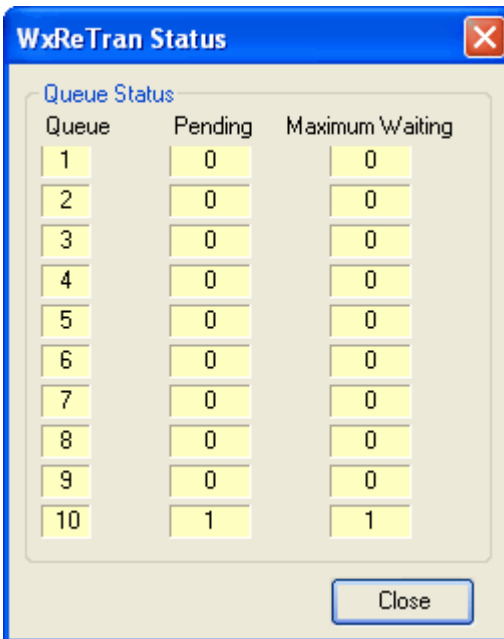
Local data can be inserted into the retransmitted data stream. To insert your own products, copy the file to one of the priority directories. They are named C:\WxMesgNet\RtPri1 through C:\WxMesgNet\RtPri10.

It is recommended that you follow the NOAA file naming convention. A product file name should be in 8.3 format. That is 8 characters before the period and 3 characters afterwards. The extension for weather text files should be TXT. For graphic products, use the appropriate extension.

WxRadar can be used to include radar images. You can also use WxLocal to include local weather conditions. (For information on WxLocal, see the Weather Message website.)

## 2.5 Queue Status

The WxReTran Status window shows the status of each priority queue.



The screenshot shows a window titled "WxReTran Status" with a close button in the top right corner. Inside the window, there is a section titled "Queue Status" containing a table with three columns: "Queue", "Pending", and "Maximum Waiting". The table has 10 rows, numbered 1 through 10. The "Pending" column shows 0 for queues 1-9 and 1 for queue 10. The "Maximum Waiting" column shows 0 for queues 1-9 and 1 for queue 10. A "Close" button is located at the bottom right of the window.

Queue	Pending	Maximum Waiting
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	1	1

The Pending column shows the number of files that are currently pending. The Maximum Waiting column shows the maximum number of files that have been waiting at one time.



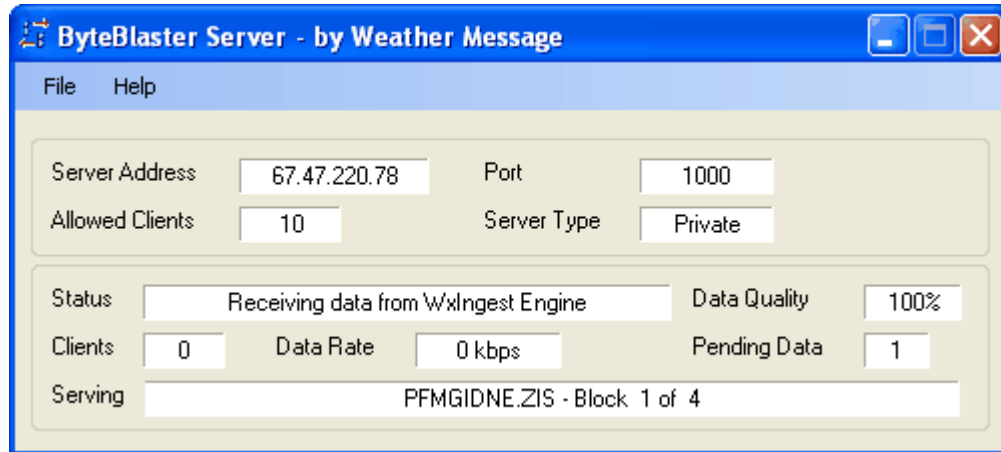
**Part**



## 3 WxBBSrvr - Byte Blaster Server

### 3.1 Overview

WxBBSrvr is used to retransmit EMWIN data over the Internet or a private network. A computer retransmitting data over the Internet is referred to as a Byte Blaster Server. The EMWIN data network is designed to allow anyone to run a server. All that is required is available bandwidth.



The main server window shows the servers activity.

In order for WxBBSrvr to receive data from the ingest engines, you must go into the setup screen on one of the ingest engines and check the **Enable Byte Blaster Server Support**. If you decide to not use the Byte Blaster server, you should uncheck this box.


WxBBSrvr uses TCP/IP port 999, 1000, 1001 and UDP port 9510 to communicate with the NOAA Host Master, Byte Blaster clients and the local ingest programs. If you have a firewall, port 1000 and 1001 must be open for WxBBSrvr to work.

**Note:** If you want to use WxBBSrvr to retransmit data on a private network, send an email to [help@wxmesg.com](mailto:help@wxmesg.com) for information to enable this operation. The default configuration requires access to the NOAA host master for proper operation.

**Note:** WxBBSrvr can receive data from the retransmission software WxReTran. This can be useful if you want to provide a backup for your local retransmission system. If you want to use this option, enable "Byte Blaster Support" in the retransmission software. Using this option will make your server a private EMWIN server.

**Note:** If WxBBSrvr is stopped with the window minimized, the next time it is started, it will start minimized.

#### System Tray

When WxBBSrvr is minimized, you can restore the main screen by right clicking on the system tray icon , then select open.

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## 3.2 Operation

WxBBSrvr waits for byte blaster client connections. After a client connects to the server, the client is required to identify itself at the time the connection is established and once every 12 minutes. If a client does not identify itself within the allotted amount of time, the byte blaster client is disconnected. Once the connection is established, the server begins to send the byte blaster client data.

The server maintains a 64K buffer for each connection. If a client's buffer reaches this maximum, the server will disconnect the client. A full client buffer indicates that the client is not capable of receiving data fast enough. This could be due to Internet congestion or other problems related to the Internet.

Should the server receive more connections than are allowed, the server will send the byte blaster client a list of the current byte blaster servers and disconnect. This will allow the disconnected byte blaster client to locate an available byte blaster server.

The server is in constant communication with the NWS host master. The host master maintains a list of private and public byte blaster servers. Every 15 seconds, the byte blaster server reports the number of connections and status of the server to the host master.

The host master sends a list of public servers to each byte blaster server every 10 minutes. This server list is passed along to each connected byte blaster client. This capability allows all of the byte blaster clients to have a current list of available byte blaster servers. It also allows the byte blaster network to be dynamically configured.

Every six minutes, the server requests its IP address from the host master. This serves as a keep-alive packet for the connection to the host master. It also serves to update the host master should a server's IP address change dynamically.

A connection to the host master is required for proper operation. Provisions have been made to run the server on a private network where an outside connection to the host master is not available. Contact Weather Message for setup details.

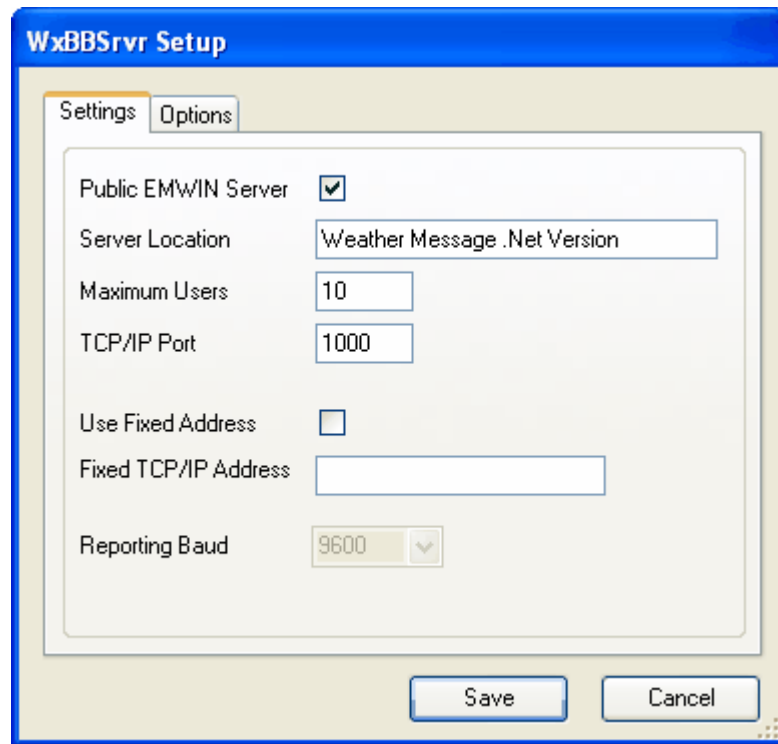
The server receives data from WxEmwin (serial port, software demodulator, and internet) or WxReTran (retransmission). The ingest programs broadcast their received data packets on the TCP/IP loop back. WxBBSrvr listens for this data on UDP port 9510. WxEmwin sends an error percentage to the byte blaster server. If the receive quality drops below 95 percent, the server will stop sending data to the byte blaster clients.

**Note:** *If you use WxEmwin to supply data to WxBBSrvr, WxEmwin will only connect to servers listed in the WxSatus.txt file. This file is not automatically updated by the byte blaster system. Although provisions were made to keep this server list updated, they were never implemented in the NWS host master software. At the present time, this file contains a list of known servers at EMWIN headquarters.*

## 3.3 Setup

The setup window allows you to establish information about your server.

### Settings Tab



**Public EMWIN Server** - If checked, will allow any EMWIN user can access your server. Your server's address will be published to all byte blaster clients for public use. Uncheck this box if your server is for private use. In this case, your address will not be published for public use.

**Note:** *If the Reporting Baud is 1200 or 2400, the NWS Host Master will not publish this server on the public network.*

**Note:** *If the program receives data from the retransmission software, it will automatically switch to a private server.*

Enter location for your server in the **Server Location** field. For example, "Weather Message Server 1 – Dadeville, AL".

Enter the number of users/clients that can connect to your server in the **Maximum Users** field. This number can range from 1 to 900. Take your available Internet bandwidth into consideration when you set the number of users. Each connection will use approximately 19,200 kbs.

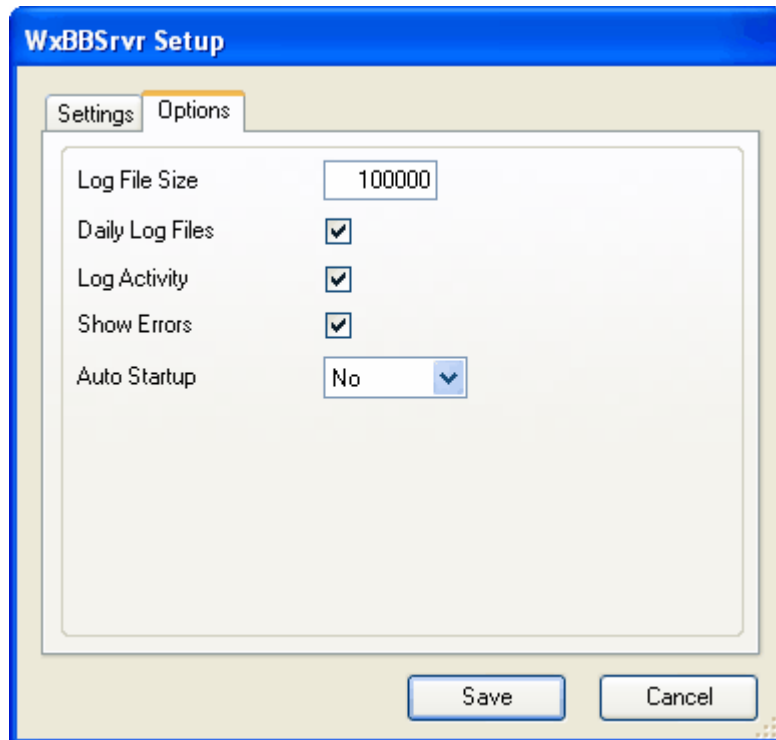
Enter the **TCP/IP Port** for your server. The default port is 1000. If this is not available use the IANA assigned EMWIN port 2211.

The program will automatically determine its TCP/IP address. In some cases, this address may not be correct because of a firewall or other settings. To specify an IP address for this server, check the **Use Fixed URL** box and enter your IP address in the **Enter Fixed URL** box.

The **Reporting Baud** displays the baud rate that will be reported to the NWS Host Master. Valid values are blank, 1200, 2400 and 9600. A blank entry is reported as 9600. Only 9600 baud servers can participate in the public EMWIN network.

**Note:** *The Reporting Baud is determined by the baud rate setting in WxEmwin. Baud rates higher than 9600 baud are reported as 9600 baud. You can override this setting by adding a registry entry. Contact Weather Message for details.*

## Options Tab



The **Log File Size** field allows you to specify this size of your ingest log file, BBLog.txt. The default is 50,000 bytes.

The **Daily Log Files** option, when checked, causes the program to store the log files for each day in the ..\WxMesgNet\WxLogs directory. The logs for each day are copied to this directory. The log file name is appended with the day number. These logs will be overwritten with the next month's logs. After enabling this option, you must restart all Weather Message programs.

**Note:** *Enabling the Daily Logs option disables the log file size option.*

Check the **Log Activity** box to have the program log connects and disconnects to the log file.

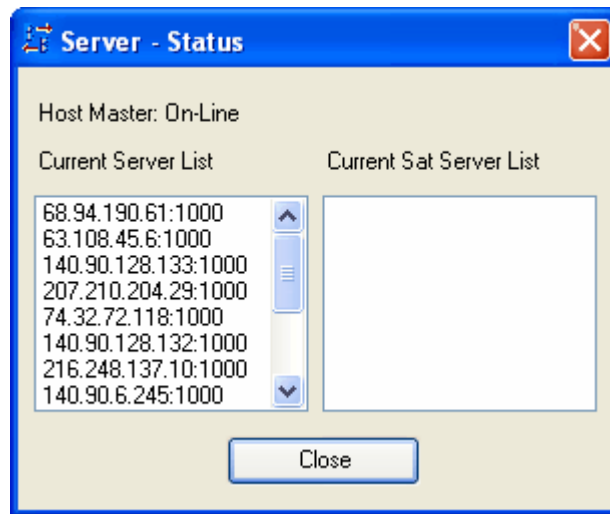
Check the **Show Errors** box to have the program pop-up error conditions as they occur. Regardless of this setting, the program will write all errors to the log file.

The **Auto Startup** option allows you to specify whether WxBBSrvr is automatically started when Windows starts. The options are No; Yes, for the current user; and Everyone, for any user.

**Note:** *The options available for **Auto Startup** are based on your user permissions. Administrator and Power users will have all of the options. Other users may only have the Yes option.*

## 3.4 Server Status

You can see the status of the EMWIN Byte Blaster network by clicking on Help and selecting Server Status. The following window is displayed.



The Current Server List box lists the servers that are currently available for byte blaster client connections. The EMWIN Host Master maintains this list and updates each server automatically.

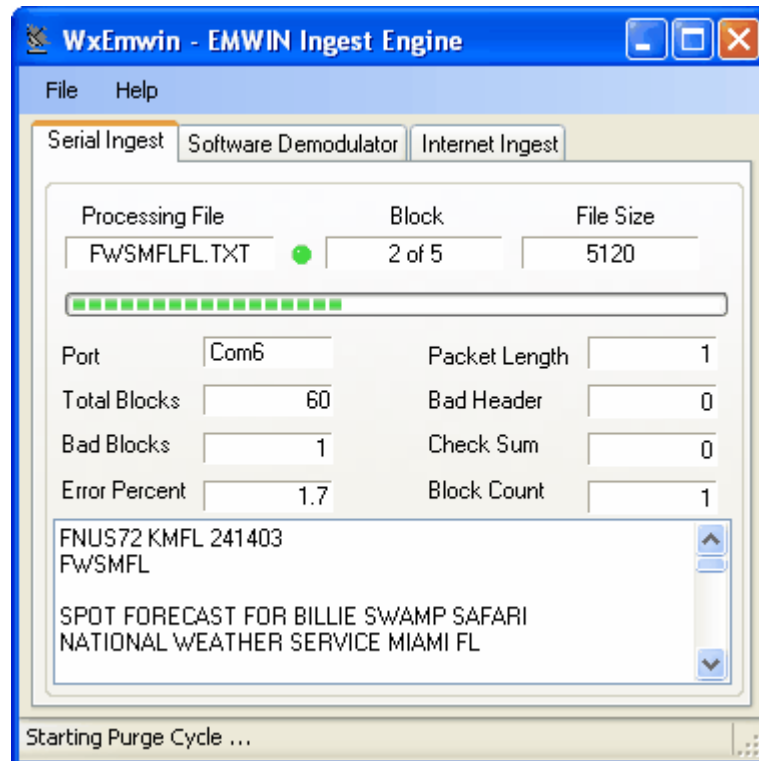
**Part**



## 4 WxEmwin - EMWIN Ingest

### 4.1 Overview

WxEmwin is used by Weather Message to receive EMWIN data. EMWIN data can be received from a serial port, software demodulator or Internet. The ingest program can be started automatically by the Weather Message Server or manually.



The main screen may contain up to three tabs that show the status of the serial, software demodulator and internet ingest subsystems.


The status bar at the bottom of the window contains status message indicating the operation of the application. Should the program stop receiving data, you will see a red **Data Alert** message indicating the data failure.

**Note:** If WxEmwin is stopped with the window minimized, the next time it is started, it will start minimized.

**Note:** You can have one or more ingest engines running at the same time. It is common to have both the Serial Ingest and Internet Ingest running at the same time for dual ingesting of EMWIN data.

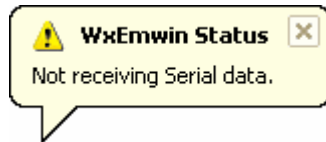
#### System Tray

When WxEmwin is minimized, you can restore the main screen by right clicking on the system

tray icon , then select open.

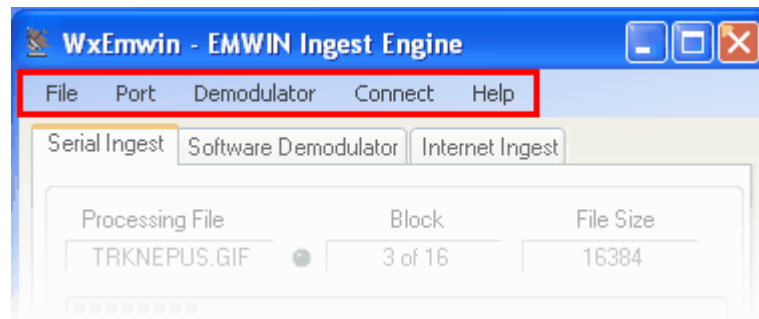
### Data Alert Notification

Should the program stop receiving data, you will see a notification message above the system tray icon. This message will indicate the data stream that has failed.



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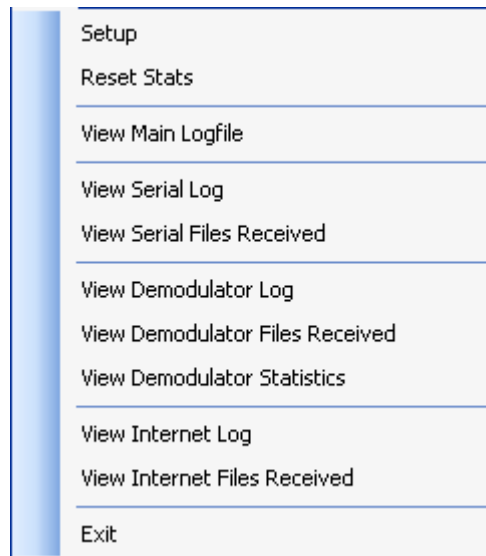
## 4.2 Menu Options



The menu buttons on this screen perform these functions:

**Note:** *The Port menu option only appears when the Serial Ingest tab is selected. The Demodulator menu option only appears when the Software Demodulator tab is selected. The Connect menu option only appears when the Internet Ingest tab is selected.*

The **File** menu allows you to setup this program, view logfiles, and exit the program.

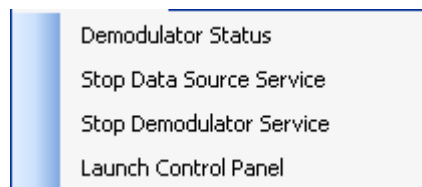


- The **Setup** option opens the [Setup window](#).
- The **View Main Logfile** displays the main log file, WeLog.txt, in notepad.
- The **View Serial Log** displays the serial ingest log file, WsLog.txt, in notepad.
- The **View Serial Files Received** displays the received files log, WsFiles.txt, in notepad.
- The **View Demodulator Log** displays the serial ingest log file, WdLog.txt, in notepad.
- The **View Demodulator Files Received** displays the received files log, WdFiles.txt, in notepad.
- The **View Demodulator Statistics** displays the demodulator statistics log, WdStatus.txt, in notepad.
- The **View Internet Log** displays the serial ingest log file, WiLog.txt, in notepad.
- The **View Internet Files Received** displays the received files log, WiFiles.txt, in notepad.
- The **Exit** option shuts down WxEmwin.

**Note:** *In order to view the Files Received Log, the Log Received Files option must be enabled.*

The **Port** menu, when present, allows you to switch between the main serial port and a backup serial port.

The **Demodulator menu**, when present allows you to interact with the EMWIN Software Demodulator provided by the National Weather Service.



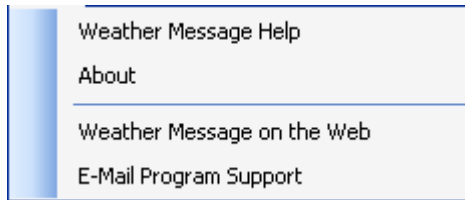
- The **Demodulator Status** opens the software demodulator status window.
- The **Stop Data Source Service** or **Start Data Source Service** option stops or starts the software demodulator data source service.
- The **Stop Demodulator Service** or **Start Demodulator Service** option stops or starts the software demodulator data source service.
- The **Launch Control Panel** option launches the software demodulator control panel.

**Note:** When using the EMWIN Software Demodulator, both the EMWIN Data Source and Demodulator service must be running.

**Note:** The Demodulator Status screen requires the Weather Message Demodulator service to be installed. The Demodulator service distributed by the National Weather Service does not output statistics.

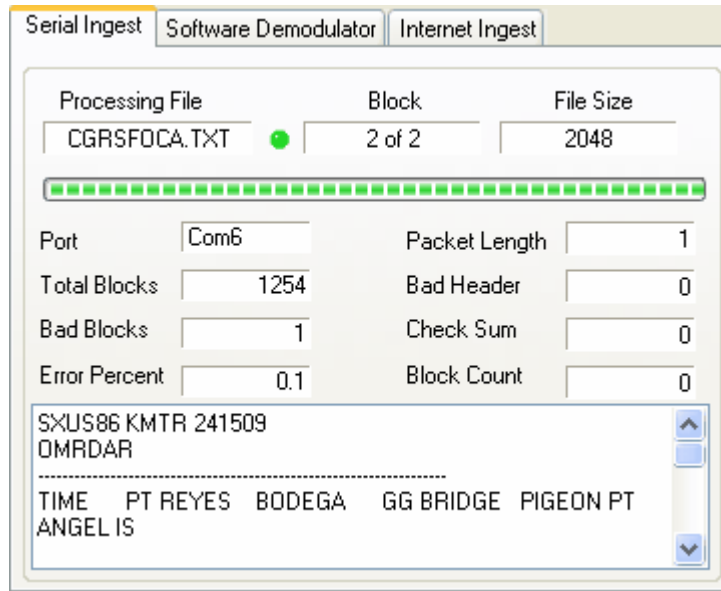
The **Connect** or **Disconnect** menu, when present allows you to force the Internet Ingest engine to disconnect and connect to the next available Internet EMWIN server.

The **Help** menu allows you to see this manual, and display information about the program.



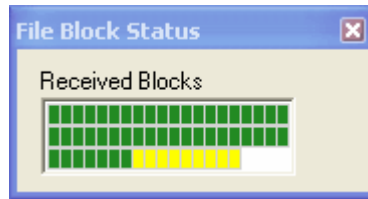
### 4.3 Serial Ingest Tab

The Serial Ingest tab, when visible, shows the option of the serial ingest engine.



The **Processing File**, **Block** and **File Size** fields show information about the received file. A **green** or **red** led appears to the right of the Processing File field. This led will normally appear green. If any of the blocks received for this message are defective, the led will change to red.

To monitor the received blocks, click on the **green** or **red** led. The following window will appear displaying the received blocks.



The **Port** field displays the serial port that is receiving the data. If you have a second receiver, you can switch to the backup port by clicking on the **Port** menu option.

The **Total Blocks** field shows the total number of blocks received for a one-hour period, the **Bad Blocks** field shows how many of the total blocks received were defective. The bad blocks field is a total of the **Packet Length**, **Bad Header** and **Check Sum** fields. The **Block Count** field counts the number of messages that any blocks missing.

The **Error Percent** field shows the error percentage of the blocks received verses bad blocks. You want this field as low as possible. The background color of this field will change based on the quality of the received data. If the background is white, the received data has 10% or fewer errors. If the background is yellow, the received data has between 10% and 20% errors. If the background is red, the received data has an error rate greater than 20%.

If the received message is text, you will see the first 1024 characters of the message in the text box. This shows the text for the block just received, it does not show the complete message.

The ingest program will attempt to repair defective messages, if a duplicate message is sent through the EMWIN data stream.

WxEmwin Serial Ingest supports a backup satellite system, retransmission receiver and/or backup by Internet. This option is enabled on the Setup [Serial Ingest Tab](#).

Should the Serial Ingest engine stop receiving data, the status bar will display a message in red indicating that data has stopped. A notification icon will also appear in the system tray. A text message is generated and placed in the ingest directory for processing by Weather Message. You can alarm the product ADMWXM to receive notifications of data loss.

**Note:** *It is recommended that you run the ingest program on a computer that will not be used for normal user programs. The processing of serial data can be interrupted by other software programs, which can result in lost weather products.*

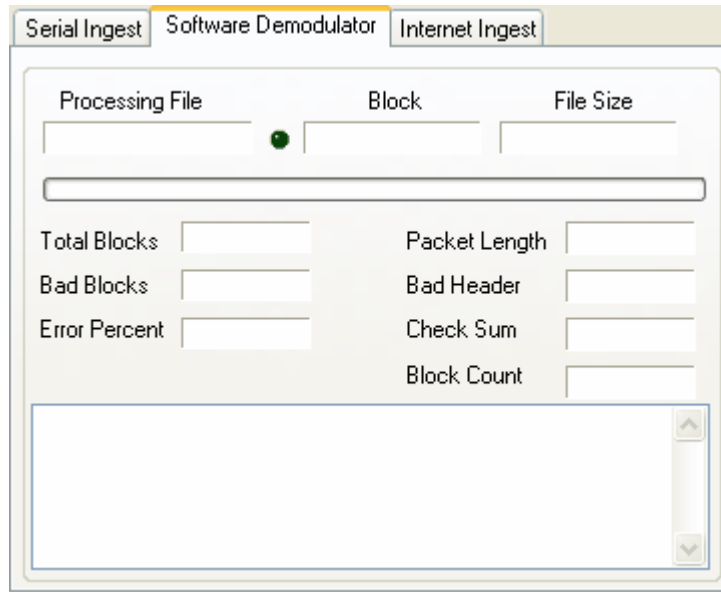
**Note:** *While the program is using Internet Ingest as a backup data source, the fields on the screen may not be updated. They will resume showing data when the main serial port begins to receive data.*

**Note:** *The program supports a second log file. The second format uses a fixed field size for easy analysis. This log file is never purged and remains until the user deletes the log files. To enable this logging option, create the directory "NwsLogs" in the c:\program files\WxMesgNet directory.*

**Note:** *Some computers may detect your satellite receiver as a serial mouse. This generally occurs when the satellite receiver is turned on when booting the computer. If this occurs, your mouse will begin to move on it's own. To correct this problem, turn off the satellite receiver. Download the comdisable tool from Microsoft at this web address <http://support.microsoft.com/default.aspx?scid=kb;en-us;819036>.*

## 4.4 Software Demodulator Tab

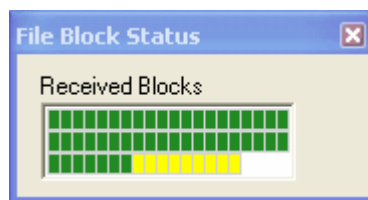
The Software Demodulator tab, when visible, shows the option of the Software Demodulator ingest engine.



The **Processing File**, **Block** and **File Size** fields show information about the received file. A **green** or **red** led appears to the right of the Processing File field. This led will normally appear green. If any of the blocks received for this message are defective, the led will change to red.

**Note:** *In order to process data, the EMWIN Data Source service and EMWIN Demodulator service must be running. Use the Demodulator menu to start and stop these services.*

To monitor the received blocks, click on the **green** or **red** led. The following window will appear displaying the received blocks.



The **Total Blocks** field shows the total number of blocks received for a one-hour period, the **Bad Blocks** field shows how many of the total blocks received were defective. The bad blocks field is a total of the **Packet Length**, **Bad Header** and **Check Sum** fields. The **Block Count** field counts the number of messages that any blocks missing.

The **Error Percent** field shows the error percentage of the blocks received verses bad blocks. You want this field as low as possible. The background color of this field will change based on the quality of the received data. If the background is white, the received data has 10% or fewer errors. If the background is yellow, the received data has between 10% and 20% errors. If the background is red, the received data has an error rate greater than 20%.

If the received message is text, you will see the first 1024 characters of the message in the text box. This shows the text for the block just received, it does not show the complete message.

The ingest program will attempt to repair defective messages, if a duplicate message is sent through the EMWIN data stream.

WxEmwin Software Demodulator ingest supports a backup satellite system, retransmission receiver and/or backup by Internet. This option is enabled on the Setup [Software Demod Tab](#).

Should the Software Demodulator ingest engine stop receiving data, the status bar will display a message in red indicating that data has stopped. A notification icon will also appear in the system tray. A text message is generated and placed in the ingest directory for processing by Weather Message. You can alarm the product ADMWXM to receive notifications of data loss.

**Note:** *It is recommended that you run the ingest program on a computer that will not be used for normal user programs. The software demodulator requires a large percentage of your computer processor in order to decode the data. This process can be interrupted by other software programs, which can result in lost weather products.*

**Note:** *While the program is using Internet Ingest as a backup data source, the fields on the screen may not be updated. They will resume showing data when the main serial port begins to receive data.*

**Note:** *The program supports a second log file. The second format uses a fixed field size for easy analysis. This log file is never purged and remains until the user deletes the log files. To enable this logging option, create the directory "NwsLogs" in the c:\program files\WxMesgNet directory.*

#### 4.4.1 Software Demodulator Status

The Software Demodulator Status screen can be displayed by opening the [Demodulator](#) menu option and clicking on Demodulator Status. This window displays status information from the software demodulator.

The screenshot shows a window titled "Software Demodulator Status" with a close button in the top right corner. The window is divided into two main sections: "QPSK Receiver" and "Bit Processor".

**QPSK Receiver Section:**

Data Source Status	Started	Side Lobe Detected	No
Carrier Frequency	-37.240550	Symbol Track Freq	17968.505859
Carrier Track	Tracking	Duration	3428.272348
Symbol Track	Tracking	Input Signal Level	324.050633
Front End Signal	Present	Estimated EbNo	10.249109

**Bit Processor Section:**

Ccsds Frames Seen	7499	Viterb Bits Decoded	61586344
Ccsds Fill Frames	774	Viterbi Sync Errors	1
Uncorrectable Errors	25	Viterbi Symbol Errors	1254308
Correctable Errors	164	Viterbi Average EsNo	4.307311

**Note:** The Demodulator Status screen requires the Weather Message Demodulator service to be installed. The Demodulator service distributed by the National Weather Service does not output statistics.

Depending on the EMWIN signal being decoded, the first group will display FSK Receiver or QPSK Receiver. When the FSK Receiver is being used, the Bit Processor will not display any data.

The following information is a brief and non-technical explanation of the fields.

### QPSK / FSK Receiver

**Data Source Status** - Display the state of the software demodulator. These status messages may appear: Not Configured, Not Connected, Connected, Opened, Started, Retry, Unknown. The operating status is Started.

**Carrier Frequency** - Displays the current frequency being tracked by the software demodulator. This value will normally be zero, however, it may appear as plus or minus numbers based on your receiver hardware.

**Carrier Track** - Displays the state of the internal carrier tracking software. These status messages may appear: Acquire, Verify, False Lock, Tracking, Unknown. The operating status is Tracking.

**Symbol Track** - Displays the state of the internal symbol tracking software. These status messages may appear: Acquire, Verify, False Lock, Tracking, Unknown. The operating status is Tracking.

**Front End Signal** - Indicates whether the software demodulator has detected a signal. This field will display Present or Absent. The operating status is Present.

**Side Lobe Detected** - Indicates whether a side lobe has been detected. The operating status is No.

Symbol Track Frequency - Displays the current symbol frequency being tracked by the software demodulator. This value will vary between the limits entered in the Software Demodulator Control Panel.

Duration - Displays the time, in seconds, that the software demodulator has been running.

Input Signal Level - Displays the internal received signal level.

Estimated EbNo - For QPSK, displays the estimated energy per bit to noise power spectral density ratio. It is a normalized signal to noise ratio.

Low / High Signal - For FSK, indicates whether the low and high signals are present.

### **Bit Processor**

CCSDS Frames Seen - Displays the number of received packets. CCSDS formatted packets represents a standard established by the Consultative Committee for Space Data Systems.

CCSDS Fill Frames - Displays the number of received packets that do not contain any data.

Uncorrectable Errors - Displays the number of received packets that could not be corrected. This number should remain zero or close to zero. Numbers here indicated lost packets.

Correctable Errors - Displays the number of received packets that could be corrected.

Viterbi Bits Decoded - Displays the number of viterbi bits decoded. The QPSK receiver uses a viterbi decoder. A viterbi decoder uses the Viterbi algorithm for decoding a bitstream that has been encoded using Forward error correction based on a Convolutional code.

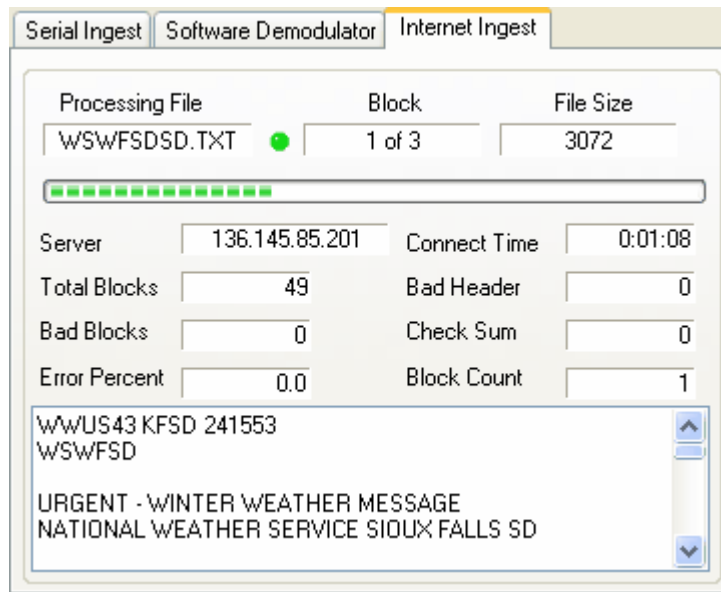
Viterbi Sync Errors - Displays the number of viterbi synchronization errors.

Viterbi Symbol Errors - Displays the number of viterbi symbols errors.

Viterbi Average EsNo - Displays the average energy per symbol to noise power spectral density.

## **4.5 Internet Ingest Tab**

The Internet Ingest tab, when visible, shows the option of the Internet ingest engine.

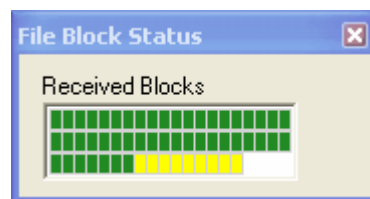


Internet Ingest uses information from EMWIN [Byte Blaster Servers](#) to maintain a list of available servers. It attempts to connect to the first available server. Should a server stop functioning, the Internet Ingest engine will attempt to contact the next available server. Every 10 minutes the internal list of servers are updated.

Internet Ingest uses TCP/IP port 1000 to communication with the servers. If you have a firewall, port 1000 must be open for outbound connections.

The **Processing File**, **Block** and **File Size** fields show information about the received file. A **green** or **red** led appears to the right of the Processing File field. This led will normally appear green. If any of the blocks received for this message are defective, the led will change to red.

To monitor the received blocks, click on the **green** or **red** led. The following window will appear displaying the received blocks.



The **Server** field displays the address of the current Byte Blaster Server in use. You can force the program to connect to the next available server by clicking on the **Disconnect** or **Connect** menu option.

The **Total Blocks** field shows the total number of blocks received for a one-hour period, the **Bad Blocks** field shows how many of the total blocks received were defective. The bad blocks field is a total of the **Packet Length**, **Bad Header** and **Check Sum** fields. The **Block Count** field counts the number of messages that any blocks missing.

The **Error Percent** field shows the error percentage of the blocks received verses bad blocks. You want this field as low as possible. The background color of this field will change based on the quality of the received data. If the background is white, the received data has 10% or fewer errors. If the background is yellow, the received data has between 10% and 20% errors. If the

background is red, the received data has an error rate greater than 20%.

If the received message is text, you will see the first 1024 characters of the message in the text box. This shows the text for the block just received, it does not show the complete message.

The ingest program will attempt to repair defective messages, if a duplicate message is sent through the EMWIN data stream.

WxEmwin Internet Ingest supports backup with the Weather Wire Ingest program. This option is enabled on the Setup [Internet Ingest Tab](#).

**Note:** *To use Weather Wire Ingest as a backup, you must have an active subscription for Weather Wire and have purchased a license from Weather Message for that ingest engine.*

Should the Internet Ingest engine stop receiving data, the status bar will display a message in red indicating that data has stopped. A notification icon will also appear in the system tray. A text message is generated and placed in the ingest directory for processing by Weather Message. You can alarm the product ADMWXM to receive notifications of data loss.

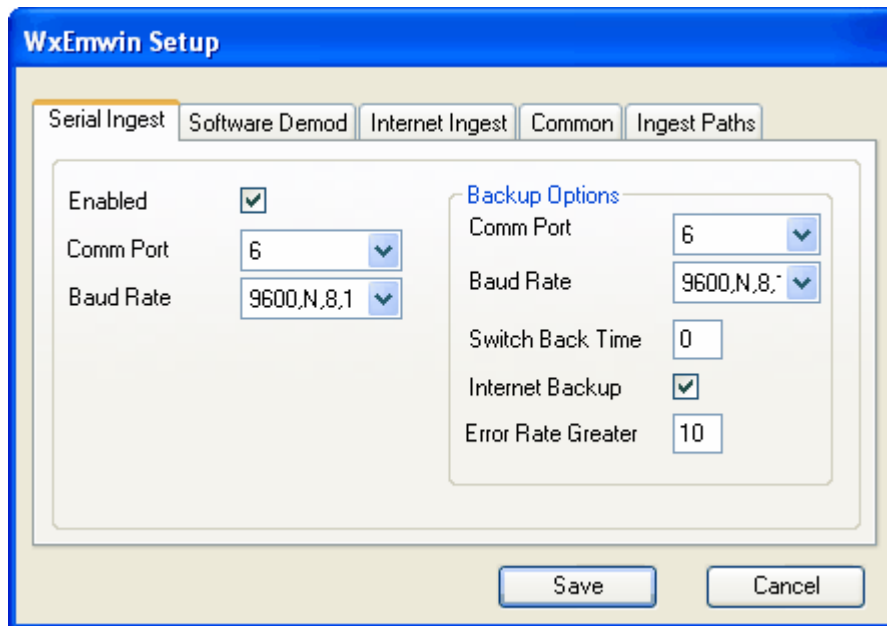
**Note:** *While the program is using Weather Wire Ingest as a backup data source, the fields on the screen may not be updated. They will resume showing data when a Byte Blaster Server begins to send data.*

**Note:** *The program supports a second log file. The second format uses a fixed field size for easy analysis. This log file is never purged and remains until the user deletes the log files. To enable this logging option, create the directory "NwsLogs" in the c:\program files\WxMesgNet directory.*

## 4.6 Setup

### 4.6.1 Serial Ingest Tab

The Serial Ingest Tab is used to define the communication port, backup options and other general operations.



The **Enabled** option should be checked if you want the Serial Ingest engine to automatically start when WxEmwin is started.

### Primary Receiver

Select the **Comm Port** (communications port or serial port) for your satellite receiver, along with the **Baud Rate** for that device. For EMWIN satellite reception, select a baud rate of 9600,N,8,1.

### Secondary Receiver / Backup Options

If you have a second satellite system or retransmission receiver, enter the **Comm Port** and **Baud Rate** under the backup options. Also, if you want to use Internet Ingest as a backup, check that option. The **Switch Back Time** is used to specify the number of minutes that the program should check back to see if the main port is functioning, when using a second serial port. If the Switch Back Time is set to zero, the program will not attempt to switch back to the main port.

The **Error Rate Greater** field sets the error rate percentage for switch over to backup. This field can be set from 5 to 95 percent. Should the error rate, of the received data, exceed the set amount, the program will switch over to the backup port or Internet Ingest.

If the main port stops sending data for 15 seconds, the program will switch to the backup port, if one is specified. If the backup port does not send data for 15 seconds, it will switch to Internet Ingest, if **Internet Backup** is enabled. If the backup port is not specified, it will switch from the main port directly to Internet Ingest.

Based on the Switch Back Time specified, it will change back over to the main port. The process will start all over again. If no data is received in 15 seconds, it will switch to the backup port and/or Internet Ingest.

**Note:** *Once Internet Ingest is started, it will not be stopped until Serial Ingest begins to receive valid data from one of the serial ports.*

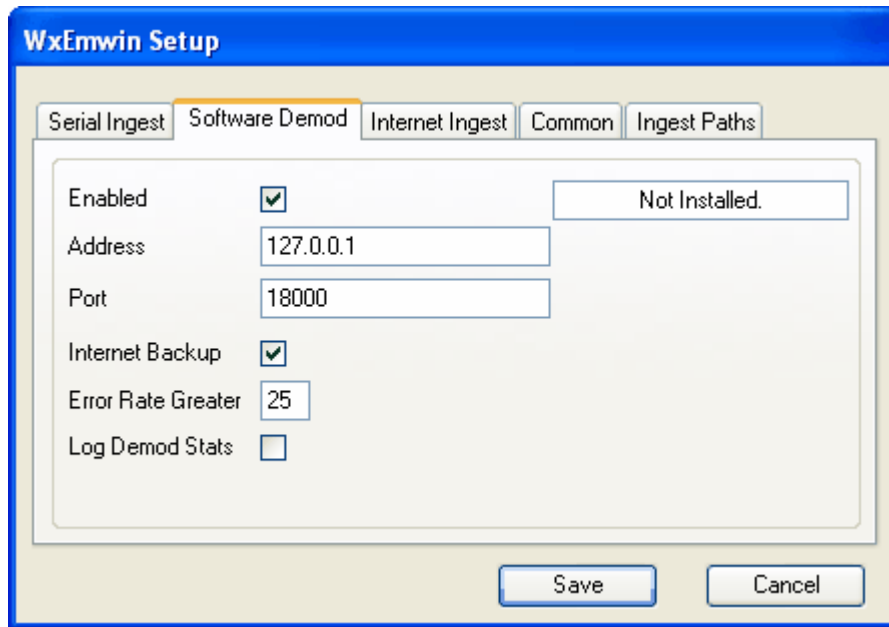
When the program switches from Serial Ingest to Internet Ingest, it will create a notification message in each ingest directory. The product identifier for this message is ADMWXM. If you

want to be alerted when the program switches between ingest sources, alarm the product ADMWXM, with no state or county selected. The notification message contains the current ingest method and computer name.

**Note:** This program communicates with WxBBSrvr using UDP port 9510 on the local loop back address.

#### 4.6.2 Software Demod Tab

The Serial Ingest Tab is used to define the communication port, backup options and other general operations.



The **Enabled** option should be checked if you want the Software Demodulator Ingest engine to automatically start when WxEmwin is started.

The **Address** field should contain the address of the software demodulator. The default setting is 127.0.0.1. The **Port** field should contain the address of the EMMWIN Demodulator service. The default port is 18000.

The **Error Rate Greater** field sets the error rate percentage for switch over to Internet Ingest backup. This field can be set from 5 to 95 percent. Should the error rate, of the received data, exceed the set amount, the program will switch over to Internet Ingest, if **Internet Backup** is enabled.

If the software demodulator stops sending data for 8 seconds, the program will switch to Internet Ingest, if **Internet Backup** is enabled.

**Note:** Once Internet Ingest is started, it will not be stopped until the Software Demodulator Ingest begins to receive valid data.

When the program switches to Internet Ingest, it will create a notification message in each ingest directory. The product identifier for this message is ADMWXM. If you want to be alerted when the program switches between ingest sources, alarm the product ADMWXM, with no state or

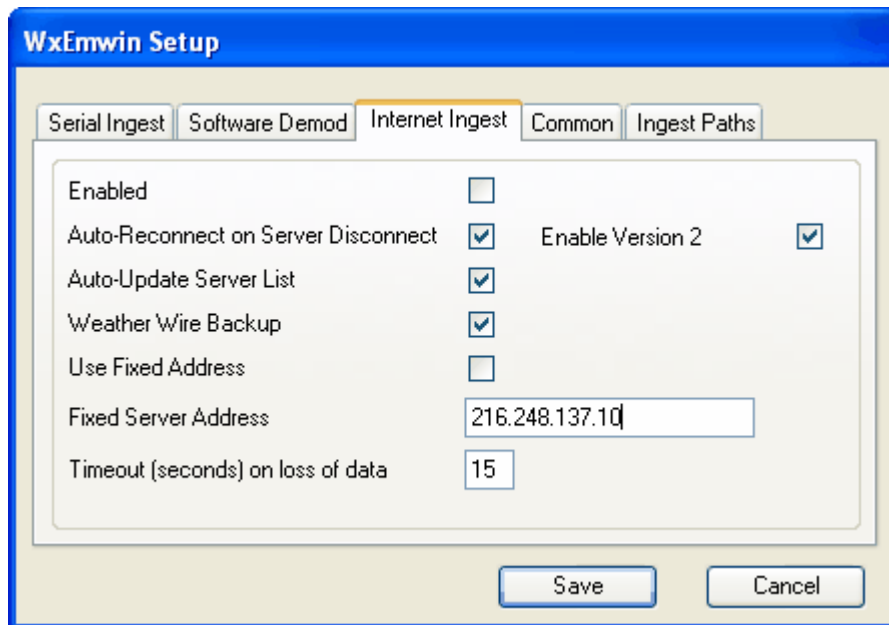
county selected. The notification message contains the current ingest method and computer name.

The **Log Demod Status**, when checked, will cause the program to log the software demodulator statistics every three seconds.

**Note:** This program communicates with WxBBSvr using UDP port 9510 on the local loop back address.

### 4.6.3 Internet Ingest Tab

The Serial Ingest Tab is used to define the communication port, backup options and other general operations.



The **Enabled** option should be checked for the Internet Ingest engine to automatically start when WxEmwin is started.

The **Auto-Reconnect on Server Disconnect** option, when checked, will cause the Internet Ingest engine to try to connect to another server if it is disconnected from the current server. This option is enabled by default and is the recommended setting.

The **Auto-Update Server List** option, when checked, will enable automatic maintenance of the available internet servers. If Internet Ingest does not maintain this list, you will need to manually update the WxSvrus.txt file to include the servers that you want it to use.

The **Weather Wire Backup** check box allows you to use Weather Wire as a backup for EMWIN. Checking this box will cause the program to automatically start WxWW2000 when EMWIN data is not available. This requires subscription and license for Weather Wire. See the Weather Wire help for details.

When the program switches from Internet Ingest to WxWW2000, it will create a notification

message in each ingest directory. The product identifier for this message is ADMWXM. If you want to be alerted when the program switches between ingest sources, alarm the product ADMWXM, with no state or county selected. The notification message contains the current ingest method and computer name.

A fixed TCP/IP server address can be used. Enter the fixed TCP/IP address in the **Enter Fixed Address** field. Click on **Use Fixed Address**, to only connect to that specific server.

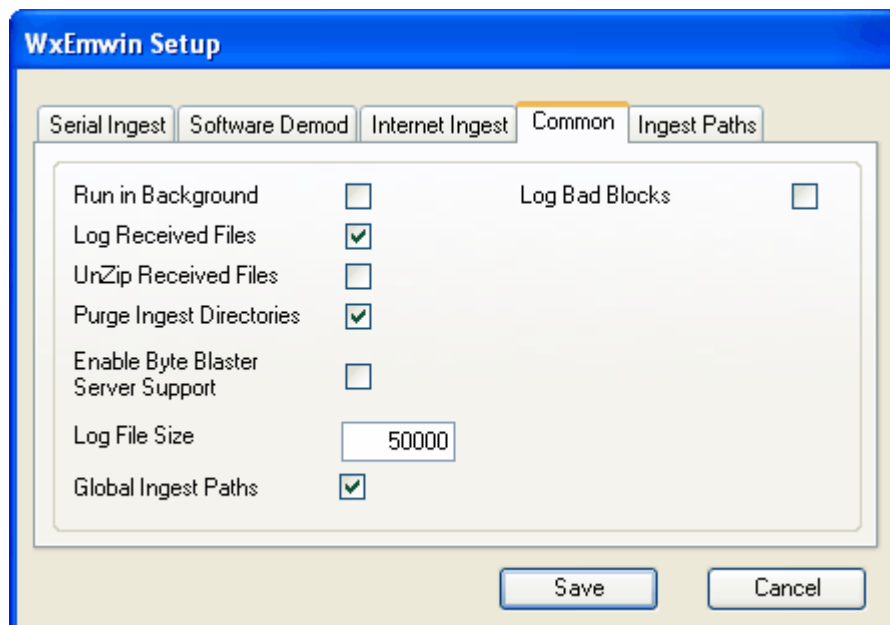
The **Timeout seconds on loss of data** is set by default to 15 seconds. The timeout can range from 10 to 600 seconds. Setting this option to zero will disable the data loss timeout.

The **Enable Version 2** option, when checked, will enable support for version 2 EMWIN packets. This option is enabled by default and is the recommended setting.

***Note:** This program communicates with WxBBSvr using UDP port 9510 on the local loop back address.*

#### 4.6.4 Common Tab

The Common Tab is used to define options common or shared by all ingest programs.



The **Run in Background** check box allows you to specify whether you want the ingest programs to run in the background. When this box is checked, the ingest programs will not show in the system tray. Once this option is enabled, you will not see the ingest programs running. In order to see the ingest screen, you will need to use the Show Ingest menu option in Weather Message Server.

***Note:** Changing this option does not take effect until the next time the ingest programs are started.*

The **Log Received Files** option causes the program to record the name of each weather file received. The names are recorded in WsFiles.txt.

The **UnZip Received Files** option, when checked, will cause the program to unzip any compressed files. This option is normally left unchecked as the Weather Message programs automatically unzip compressed files. In some applications it may be desirable to unzip the files before they are copied to the ingest directory(s).

The **Purge Ingest Directories** option, when checked, will cause the program to automatically purge the ingest directories after 24 hours.

If you are running the Byte Blaster server, WxBBSrvr, check the **Enable Byte Blaster Server Support** box. This will cause the ingest program to create data records for processing by the Byte Blaster server.

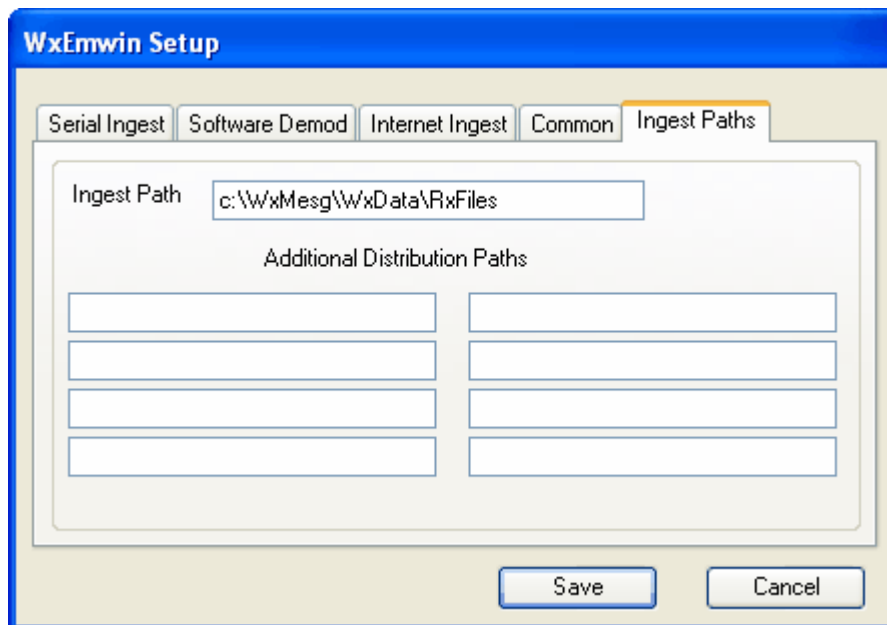
The **Log File Size** field allows you to specify this size of your ingest log files. The default is 50,000 bytes.

The **Global Ingest Paths** option controls whether WxEmwin uses global ingest paths. Global ingest paths are shared between all of the ingest programs. Unchecking this box will allow you to define ingest paths that are different from the global ingest paths.

The **Log Bad Blocks** option, when checked, will cause the program to log bad block information in the associated ingest engine's log file.

#### 4.6.5 Ingest Paths Tab

The Ingest Paths Tab is used to define the directories that will store the received weather products for processing.



The **Ingest Path** is defined in the Weather Message Server setup screen and would not normally be entered here.

**Note:** The *Ingest Path* can be changed if you want to deposit the received messages in a directory other than the one established for Weather Message Server.

The **Additional Distribution Paths** can be used to place a copy of the received weather text in different directories for processing by other programs. For example, if you use Weather Message to receive your weather data, you can put a copy of the received messages in a second or third directory for processing by RealEMWIN or the Weather Message Retransmission program.

**Note:** *Changing the Ingest and Additional Distribution Paths on this screen will automatically change them for WxPort and WxWW2000.*

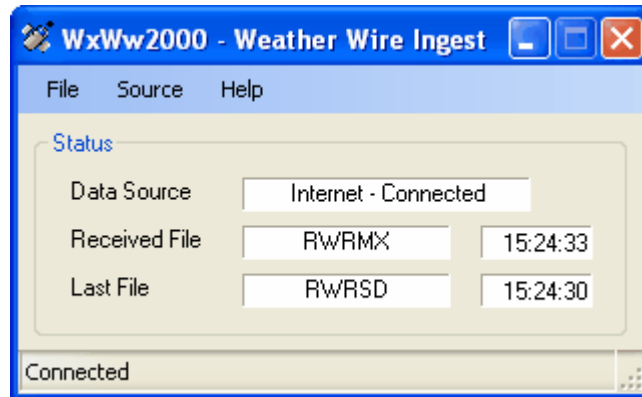
**Part**



## 5 WxWw2000 - Weather Wire Ingest

### 5.1 Overview

WxWW2000 is used by Weather Message for Internet or serial port Weather Wire data feeds. The ingest program can be started automatically by the Weather Message Server or manually.



The main screen shows the status of incoming messages.

The **Data Source** field shows type connection type; Internet or Serial Port.


The **Received File** and **Last File** fields display the product identifier of the current and last files received along with their respective received times.

**Note:** Before WxWw2000 will connect to an Internet server you must enter your user name and password in the setup screen. For more information about Weather Wire and registering, see [What is Weather Wire](#). To obtain a user name and password go to this web address <https://oi.weatherwire.net>.

**Note:** If you are using the Internet ingest option, the program will alternate the program icon in the system tray to let you know that it is connected.

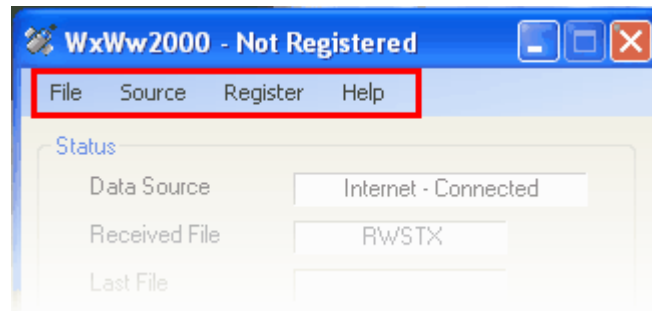
**Note:** If WxWw2000 is stopped with the window minimized, the next time it is started, it will start minimized.

#### System Tray

When WxWw2000 is minimized, you can restore the main screen by right clicking on the system tray icon , then select open.

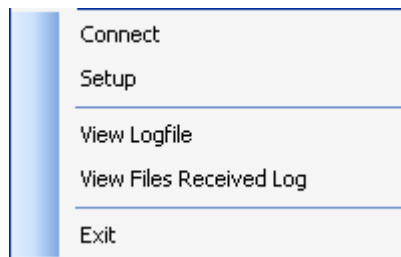
Copyright © 2010 Weather Message Software

## 5.2 Menu Options



The menu buttons on this screen perform these functions:

The **File** menu allows you to setup this program, show details, view logfiles, and exit the program.



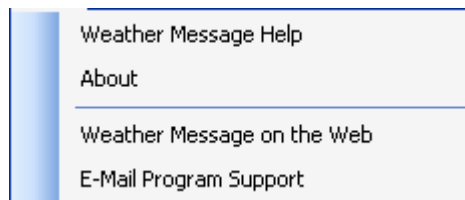
- The **Connect** option starts a connection to the Internet servers.
- The **Setup** option opens the [Setup window](#).
- The **View Logfile** displays the ingest log file in notepad.
- The **View Files Received Log** displays the received files log in notepad.
- The **Exit** option shuts down WxIngest.

**Note:** *In order to view the Files Received Log, the Log Received Files option must be enabled.*

The **Source** menu allows you to toggle between the Internet servers and serial port connection.

The **Register** menu allows you to [register](#) WxWW2000. This button does not appear if the software is registered. Note: If the software is not registered after 60 days, it will stop functioning.

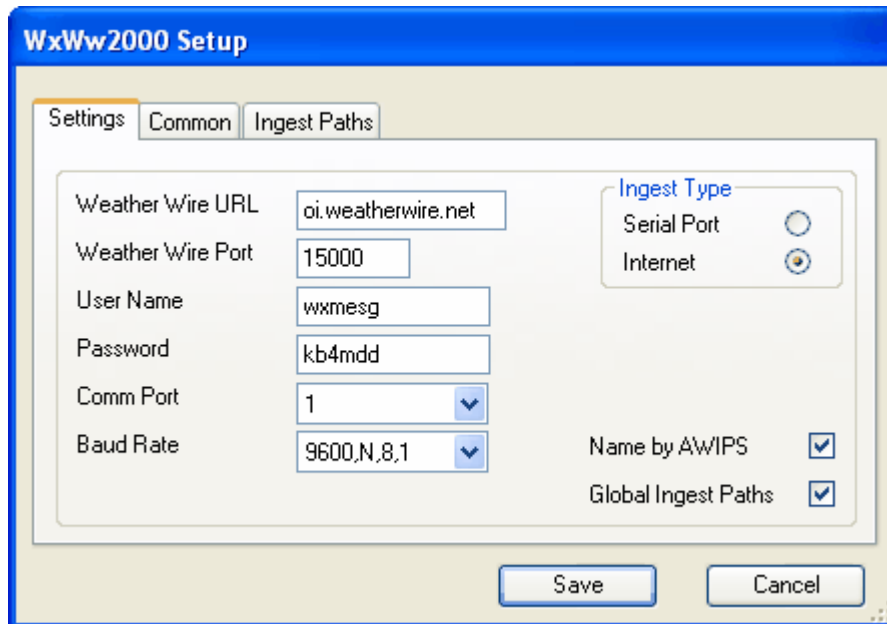
The **Help** menu allows you to see this manual, and display information about the program.



## 5.3 Setup

### 5.3.1 Settings Tab

The Settings Tab is used to define the Internet settings, user name, password, communications port and other general operations.



Select the **Ingest Type**; **Serial Port** or **Internet**.

For Internet ingesting, you must specify the **Weather Wire URL**, **Weather Wire Port**, **User Name** and **Password**. The program will provide defaults for the URL and port. You will need to enter the User Name and Password that you supplied to DynaCorp when you signed up for this service. To register for a user name and password go to this web address <https://oi.weatherwire.net>.

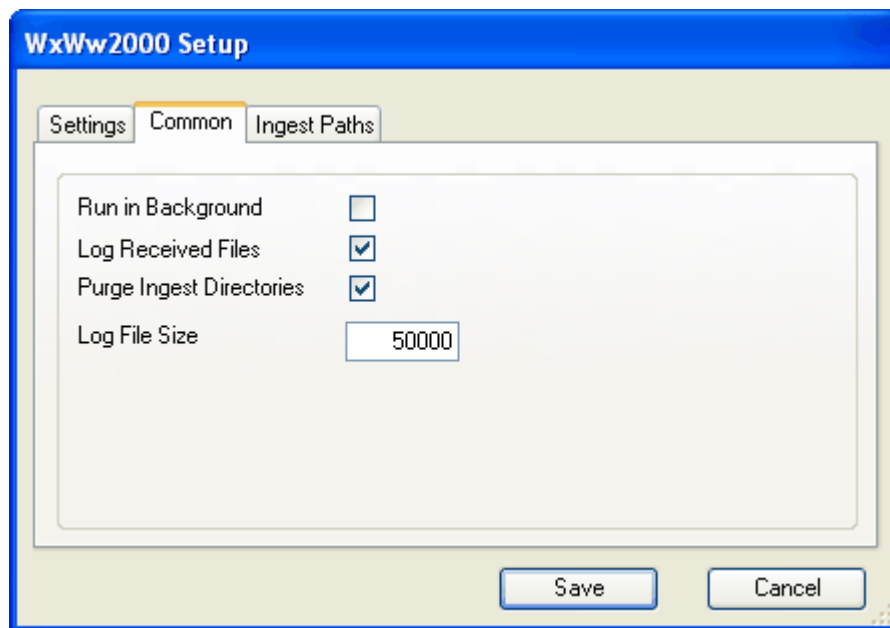
For Serial Port ingesting, select the appropriate **Comm Port** and **Baud Rate**.

The **Name by AWIPS** option, when checked, causes the program to name the received files using the AWIPS identifier found in the message, followed by the originating station's state abbreviation. When it is not checked, the received files are named using the first 3 characters of the AWIPS identifier, followed by the originating station's 3 character abbreviation, followed by the originating station's state abbreviation.

The **Global Ingest Paths** option controls whether WxWw2000 uses global ingest paths. Global ingest paths are shared between all of the ingest programs. Unchecking this box will allow you to define ingest paths that are different from the global ingest paths.

### 5.3.2 Common Tab

The Common Tab is used to define options common or shared by all ingest programs.



The **Run in Background** check box allows you to specify whether you want the ingest programs to run in the background. When this box is checked, the ingest programs will not show in the system tray. Once this option is enabled, you will not see the ingest programs running. In order to see the ingest screen, you will need to use the Show Ingest menu option in Weather Message Server.

***Note:** Changing this option does not take effect until the next time the ingest programs are started.*

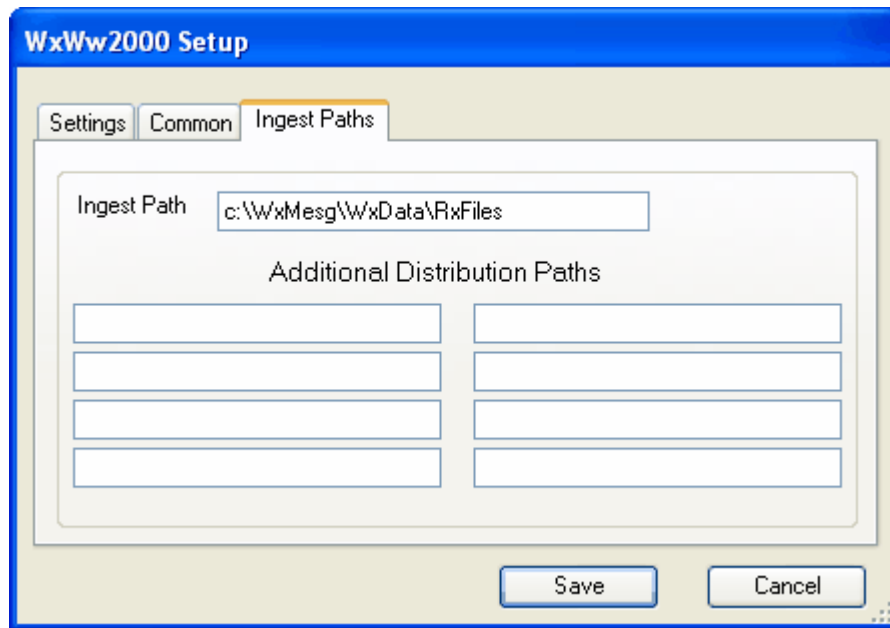
The **Log Received Files** option causes the program to record the name of each weather file received. The names are recorded in IBFiles.txt.

The **Purge Ingest Directories** option, when checked, will cause the program to automatically purge the ingest directories after 24 hours.

The **Log File Size** field allows you to specify this size of your ingest log file, IBLog.txt. The default is 50,000 bytes.

### 5.3.3 Ingest Paths Tab

The Ingest Paths Tab is used to define the directories that will store the received weather products for processing.



The **Ingest Path** is defined in the Weather Message Server setup screen and would not normally be entered here.

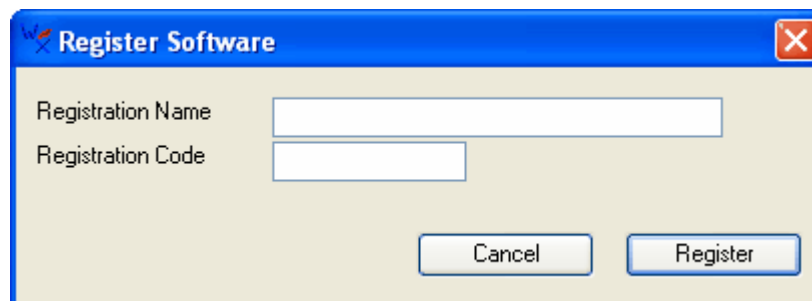
**Note:** The *Ingest Path* can be changed if you want to deposit the received messages in a directory other than the one established for Weather Message Server.

The **Additional Distribution Paths** can be used to place a copy of the received weather text in different directories for processing by other programs. For example, if you use Weather Message to receive your weather data, you can put a copy of the received messages in a second or third directory for processing by RealEMWIN or the Weather Message Retransmission program.

**Note:** Changing the *Ingest* and *Additional Distribution Paths* on this screen will automatically change them for *WxByte*, *WxIngest*, and *WxPort*.

## 5.4 Register Software

The Register menu option allows you to register your software.



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When you purchase WxWw2000, you will be supplied with a **Registration Name** and **Registration Code**. Enter these exactly as they are printed. These fields are case sensitive.

After the software is registered, we recommend that you stop and restart the software.

To purchase the software go to <http://www.wxmesg.com/purchpay.htm>.



**Part**

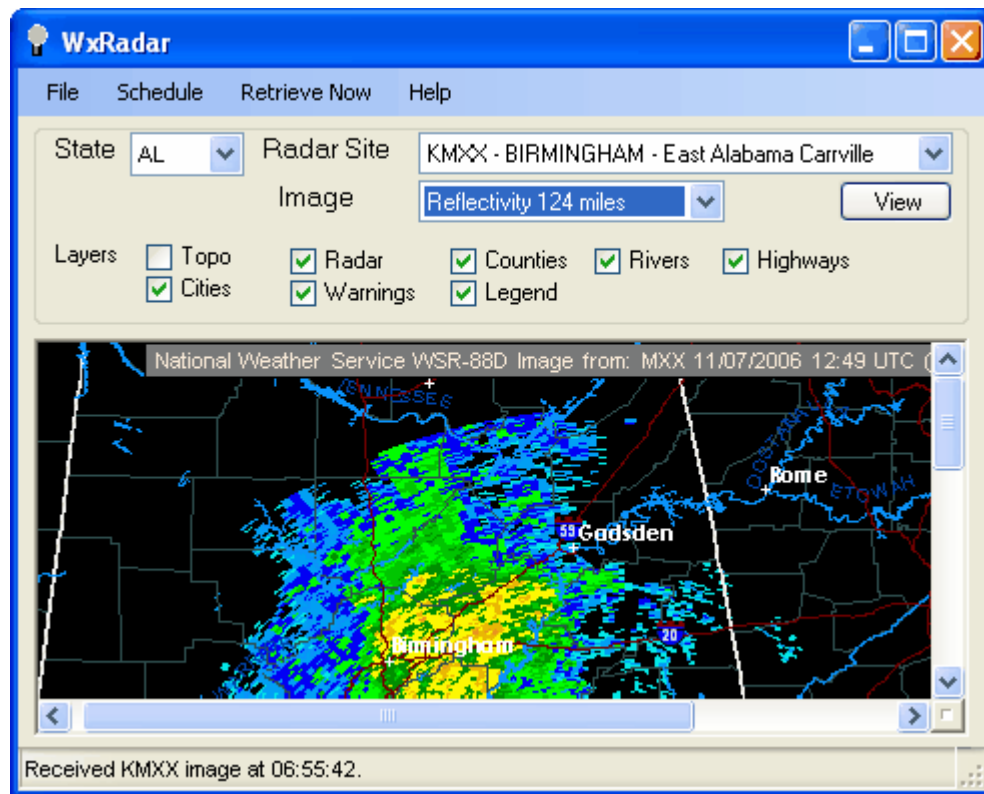


## 6 WxRadar

### 6.1 Overview

WxRadar is a support application that can be used to automatically retrieve radar images. It can retrieve a specific radar site for viewing on the screen, or schedule single or multiple radar sites for ingesting by Weather Message or other programs. WxRadar requires Internet access.

If you plan to use WxRadar to retrieve images on a schedule, it should be placed in the startup box in Windows. This will insure that the program is automatically started each time the computer is booted.




When scheduling radar images, the images that are received will be copied to directories for other programs to process. You can use it in conjunction with Weather Message to FTP images to a website or WxReTran for EMWIN retransmission. See [Scheduling](#).

Images processed by Weather Message Server can be made available to the Weather Message Client Image Viewer. The Image Viewer can then be used to animate the received radar images.

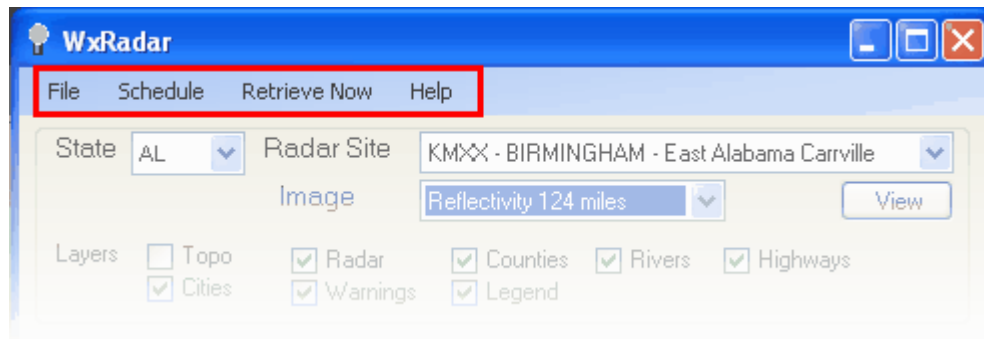
**Note:** *If WxRadar is stopped with the window minimized, the next time it is started, it will start minimized.*

#### System Tray

When WxRadar is minimized, you can restore the main screen by right clicking on the system tray icon , then select open.

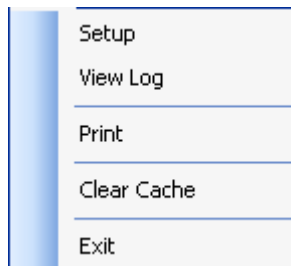
Copyright © 2010 Weather Message Software

## 6.2 Menu Options



The menu buttons on this screen perform these functions:

The **File** menu allows you to setup this program, view logfile, print the current radar image and exit the program.

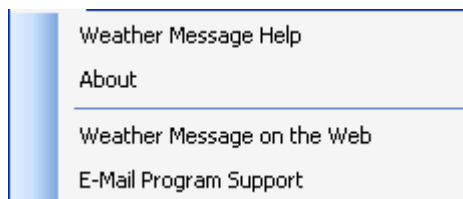


- The **Setup** option opens the [Setup window](#).
- The **View Logfile** displays the radar log file in notepad.
- The **Print** option prints the current radar image on your default printer.
- The **Clear Cache** option clears the radar cache directory of all static image overlays.
- The **Exit** option shuts down WxRadar.

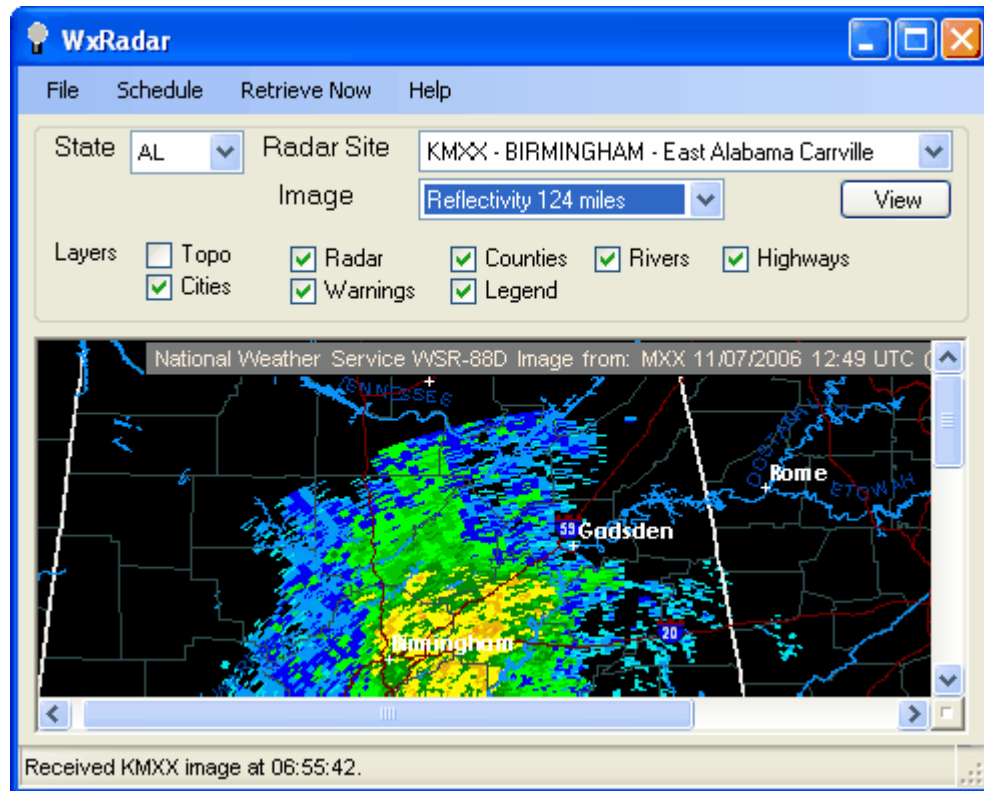
The **Schedule** menu allows you to establish a [schedule](#) to retrieve radar images.

The **Retrieve Now** menu forces the application to start a retrieve cycle.

The **Help** menu allows you to see this manual, and display information about the program.



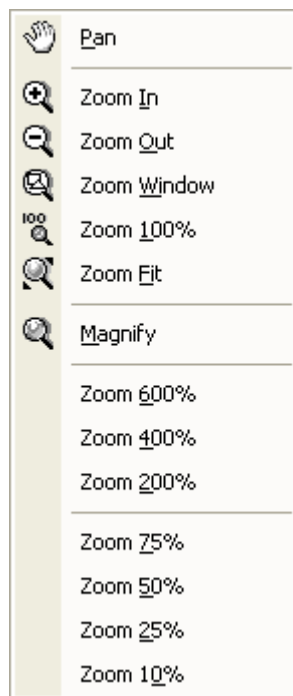
## 6.3 Main Window



The main window allows you to quickly retrieve a radar image. Select the **State**, **Radar Site**, **Image** type and **Layers**. Click the **View** button to retrieve the image selected.

**Hint:** To receive national radar products, select the state abbreviation NA.

The image can be resized to fit the display window or zoomed for closer inspection. To activate these features, right click on the image and select one of the displayed options.



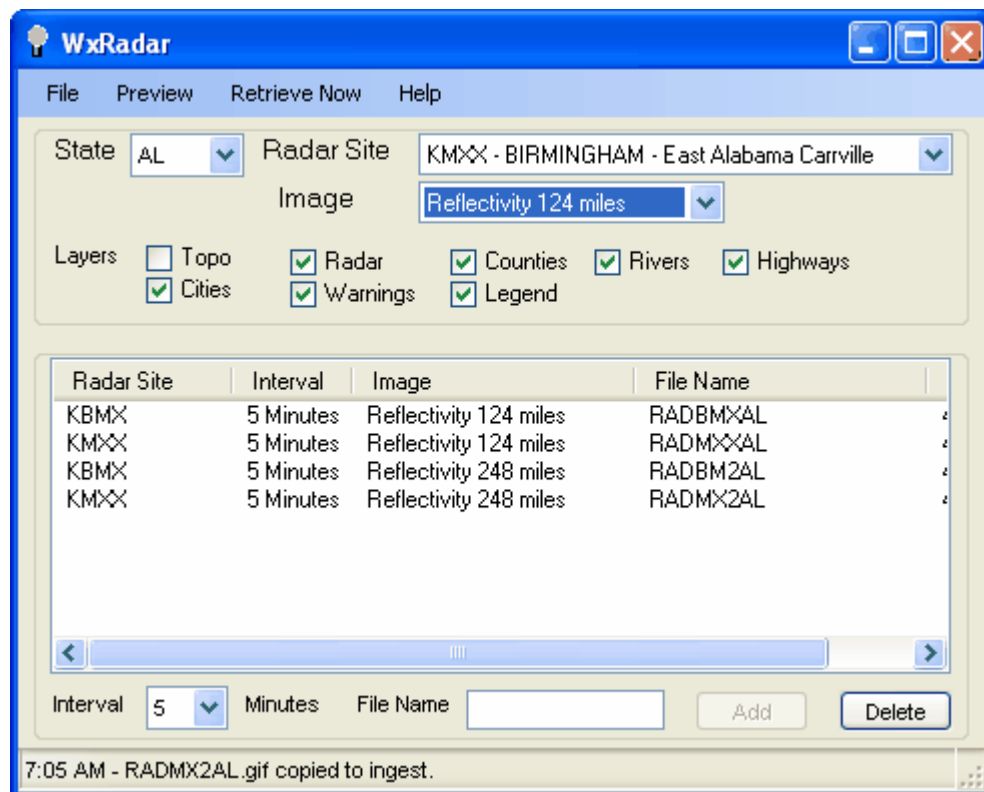
The default view is Zoom 100%.

To print the displayed image, click on the File menu and select Print. The image will be printed to your default printer.

**Note:** If WxRadar cannot download the requested radar image, a "Radar Unavailable" image will be displayed. The "Radar Unavailable" image can be customized by changing the "RadUnavl.gif" file.

## 6.4 Scheduling

To schedule radar images for automatic retrieval, click on the Schedule menu. The main window will change to allow you to setup schedules.



Select the **State**, **Radar Site**, **Image**, **Layers**, **File Name** for ingest and **Interval** to retrieve. Click on the **Add** button to schedule that radar site. To remove a site, click on the site in the list and click the **Delete** button.

**Hint:** To receive national radar products, select the state abbreviation NA.

**Note:** If you do not enter a file name, WxRadar will create the radar file name in the format, "RAD" plus the last three letters of the radar site plus the 2 digit state abbreviation plus ".gif". For example, the file name for KMXX would be RADMXXAL.gif.

The scheduled radar images will be retrieved based on the interval period specified. Valid intervals are 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40, 45, 50, 55 and 60 minutes.

The results of each scheduled retrieve is logged to the file RadLog.txt. To view this log file, click on File and View Log. The log file will contain an entry for each time it attempts to retrieve a radar image. It will also contain any error conditions.

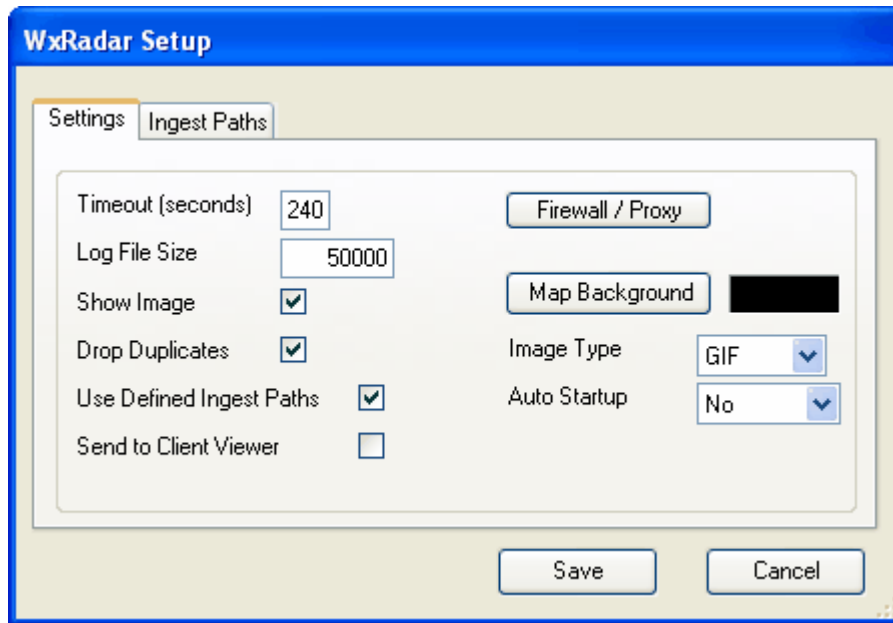
**Hint:** The scheduled images will be retrieved according to the schedule you establish. If you want to retrieve all images immediately, click on the Retrieve Now menu button.

When you are finished entering your schedule, click on the Preview menu. This returns you to the [Main Window](#).

## 6.5 Setup

### 6.5.1 Settings Tab

The Settings Tab is used to define general program operation.



The **Timeout** field allows you to specify the maximum amount of time the program will wait on the NOAA servers to respond.

The **Log File Size** field allows you to specify this size of your log file, RadLog.txt. The default is 50,000 bytes.

When the program retrieves images from the defined schedule, it does not display these images in the preview window. The **Show Image** check box, when checked, causes the program to show each image as it is received.

The **Drop Duplicates** check box, when checked, will create a CRC32 checksum on each received image. If the next image received is a duplicate, the program will not process the image.

The **Use Defined Ingest Paths** check box, when checked, will cause the program to use the ingest paths defined in the ingest programs, WxByte and WxIngest. If you want to define your own ingest paths for WxRadar, remove this check.

The **Send to Client Viewer** option, when checked, will cause the program to store a copy of the image for viewing by the image viewer built into the Message Client. This option can be used in special situations where radar images are not being processed by Weather Message Server. The user can configure WxRadar to process radar images and place them in the local WxImages directory for viewing in the Message Client.

The **Firewall / Proxy** button allows you to configure Firewall and Proxy settings for your computer. See [Firewall / Proxy](#).

The **Map Background** button allows you to set the color of the radar image background.

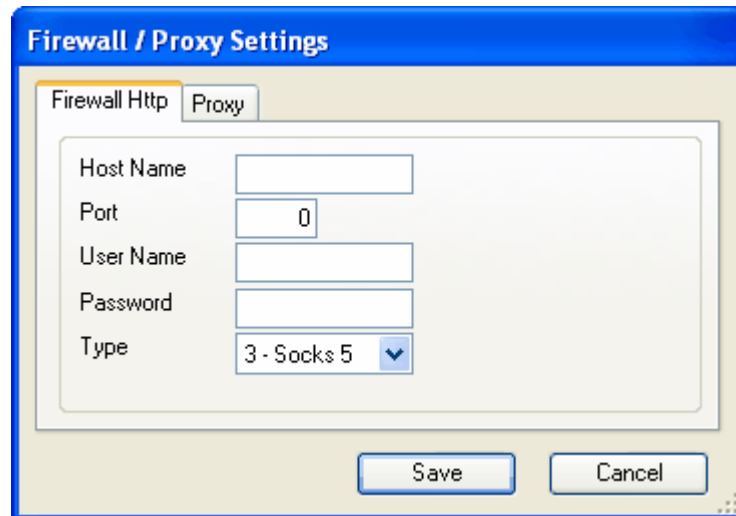
The **Image Type** list allows you to select an image format for the received image. Radar images are received by default in GIF format. You can select GIF, JPG, PNG, BMP, and TIF formats.

The **Auto Startup** option allows you to specify whether WxRadar is automatically started when Windows starts. The options are No; Yes, for the current user; and Everyone, for any user.

**Note:** The options available for **Auto Startup** are based on your user permissions. Administrator and Power users will have all of the options. Other users may only have the Yes option.

### 6.5.1.1 Firewall / Proxy

The Firewall / Proxy window allows you to configure firewall / proxy information for your computer.

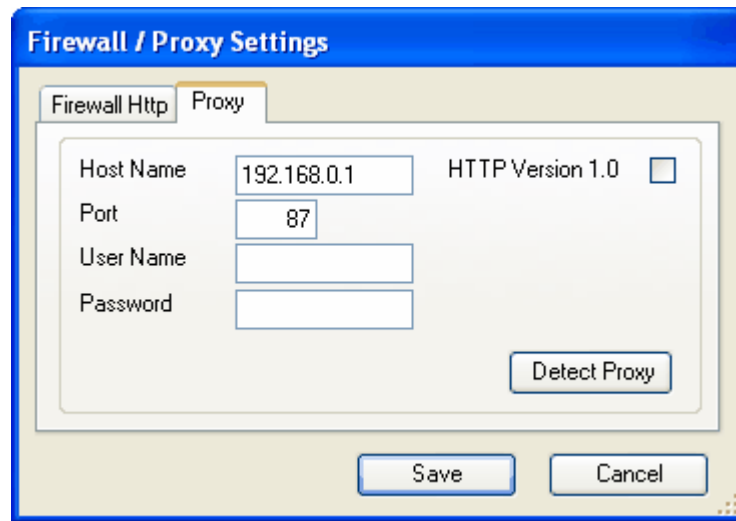


For a HTTP firewall, enter the domain name or TCP/IP address of the firewall in the **Host Name** field.

Enter the **Port** number for the firewall.

If required, enter a **User Name** and **Password**. This should be a user name and password setup in the firewall.

Select the **Type** of firewall. Valid entries are 1-Tunnel, 2-Socks version 4, or 3-Socks version 5.



For a Proxy access, enter the domain name or TCP/IP address of the proxy in the **Host Name** field.

Enter the **Port** number for the firewall.

If required, enter a **User Name** and **Password**. This should be a user name and password setup for the proxy.

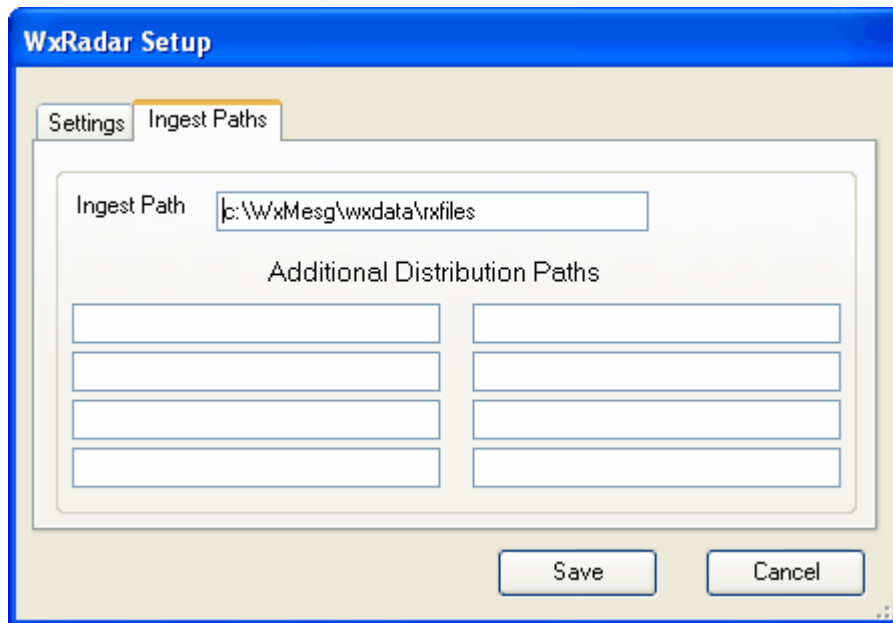
If **HTTP version 1.0** is required for the proxy server, check this box.

The **Detect Proxy** button will automatically detect the proxy settings for your computer and populate the host name and port fields.

**Note:** *The Firewall / Proxy settings are common to all Weather Message applications. Changing these settings will automatically change them for the other applications.*

## 6.5.2 Ingest Paths Tab

The Ingest Paths Tab is used to define the directories that will store the received weather products for processing.



The **Ingest Path** is defined in the Weather Message Server setup screen and would not normally be entered here.

The **Additional Distribution Paths** can be used to place a copy of the received weather text in different directories for processing by other programs. For example, if you use Weather Message to receive your weather data, you can put a copy of the received messages in a second or third directory for processing by RealEMWIN or the Weather Message Retransmission program.

**Note:** *If the Use Defined Ingest Paths setting is checked, you will not be able to change the paths listed.*

**Part**



## 7 Supplemental

### 7.1 Upgrading from a Previous Version

If you are upgrading a version of retransmission software provided from Maryland Radio Center, Xenocode, or Emwin Pro, the following information will be helpful.

#### Upgrade from 16-bit version.

To upgrade from the 16-bit version, install WxReTran according to this manual. After installation, copy the following files to their corresponding WxReTran file.

C:\weather\mrcfiles.txt	c:\WxMesg\FillFile.txt
C:\weather\hipri.txt	c:\WxMesg\RtList1.txt
C:\weather\normal.txt	c:\WxMesg\RtList5.txt
C:\weather\compress.txt	c:\WxMesg\RtList9.txt
C:\weather\delete.txt	c:\WxMesg\RtList11.txt
C:\weather\txsked.txt	c:\WxMesg\RtSched.txt

Check all of the setup screens and enter information for your retransmission site.

**Note:** *The 16-bit version processed all priority lists before checking the discard list. WxReTran processes the discard list first, because of this, you may need to change the file names that appear in the discard list.*

**Note:** *If you have ????????.TXT in your discard list, no text weather files will be transmitted.*

If you use the scheduler, you will need to change the paths associated with the source file and destination priority directory. Failure to do so will cause your schedule to be ignored.

**Note:** *The path "c:\WxMesg\" refers to the directory that you installed WxReTran. If you installed the program in a different directory, use your installation path.*

#### Upgrade from 32-bit version.

To upgrade from the 32-bit version, install WxReTran according to this manual. After installation, copy the following files to their corresponding WxReTran file.

C:\weather\fillfile.txt	c:\WxMesg\FillFile.txt
C:\weather\prilst0.txt	c:\WxMesg\RtList0.txt
C:\weather\prilst1.txt	c:\WxMesg\RtList1.txt
C:\weather\prilst2.txt	c:\WxMesg\RtList2.txt
C:\weather\prilst3.txt	c:\WxMesg\RtList3.txt
C:\weather\prilst4.txt	c:\WxMesg\RtList4.txt
C:\weather\prilst5.txt	c:\WxMesg\RtList5.txt
C:\weather\prilst6.txt	c:\WxMesg\RtList6.txt
C:\weather\prilst7.txt	c:\WxMesg\RtList7.txt
C:\weather\prilst8.txt	c:\WxMesg\RtList8.txt
C:\weather\prilst9.txt	c:\WxMesg\RtList9.txt
C:\weather\prilst10.txt	c:\WxMesg\RtList10.txt
C:\weather\prilst11.txt	c:\WxMesg\RtList11.txt
C:\weather\prilst12.txt	c:\WxMesg\RtList12.txt
C:\weather\schedule.txt	c:\WxMesg\RtSched.txt

Check all of the setup screens and enter information for your retransmission site.

If you use the scheduler, you will need to change the paths associated with the source file and destination priority directory. Failure to do so will cause your schedule to be ignored.

**Note:** The path "c:\WxMesg\" refers to the directory that you installed WxReTran. If you installed the program in a different directory, use your installation path.

## 7.2 Interface Specifications

WxReTran communicates with your external modulator/modem to send the EMWIN data. The following RS232 connections should be made, depending on your interface.

RS232 Pin	Description
2	Transmit data – Outgoing EMWIN data
4	Request to Send (RTS) – Push to Talk (PTT)
7	Ground
20	Data Terminal Ready – Power for modulator

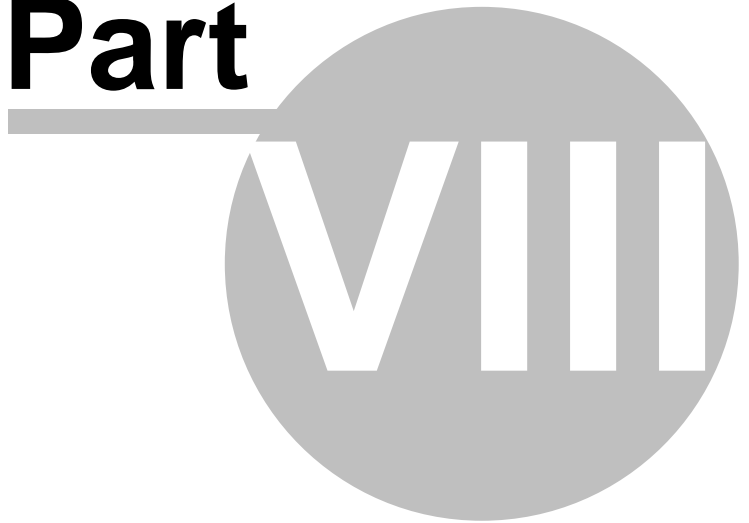
WxReTran will set the DTR line high when the program starts. The DTR line can be used to supply power to the modulator. The RTS line goes high when the program wants to transmit data. The program will wait a user definable amount of time after switching the PTT on before transmitting data. This will insure that the transmitter has adequate time to come up.

Morse code, used for radio identification, is generated by turning the PTT on and off. If your modulator/modem does not support identification by this method, external circuitry will be required.

The modulator will need to be connected to your transmitter. See the modulator instructions for installation specifics.

**Note:** *If you plan to transmit EMWIN data at all times, you will need a continuous duty transmitter. A continuous duty transmitter is rated for this type of service. Ordinary transmitters do not have adequate cooling for continuous service. Consult your local two-way radio dealer for information.*

**Part**



## 8 Software License

### LICENSE AGREEMENT

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Danny Lloyd, hereafter referred to as Author, grants you a non-exclusive license to use the software known as WxMesg, or Weather Message, hereafter referred to as Software.

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