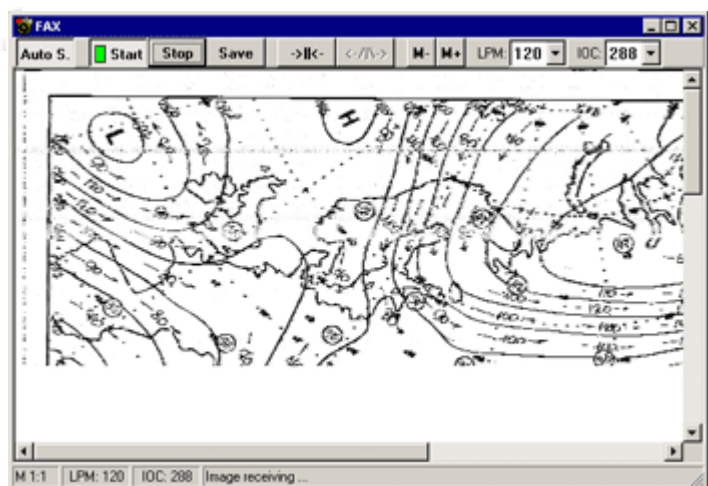
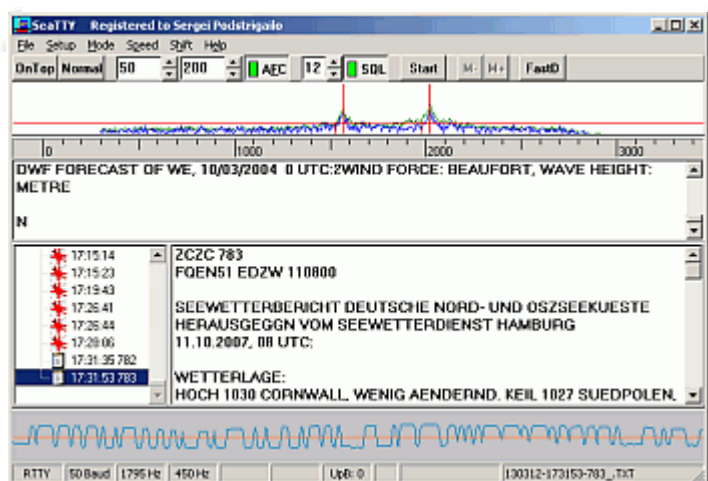


# SeaTTY v2.65

SeaTTY — [Version history](#) | [Downloads and Registration](#)

A program to receive weather reports, navigational warnings and weather charts transmitted in RTTY, NAVTEX, PACTOR-1 FEC and HF-FAX (WEFAX) modes on longwave and shortwave bands. It can decode GMDSS DSC (HF and VHF) messages. Software also can automatically save NOAA Weather Radio SAME voice messages (NWR SAME) and them digital headers. No additional hardware is required — you need only a receiver and computer with a sound card.

**Platform:** Windows XP/Vista/7/8/10/11



The author's program overview

The working area of the program is divided into several windows, the sizes of which can be changed by the user by dragging the borders.

In the top window the current spectrum of a signal (blue line) and a peak detector of spectral components (green line) are shown. Ruler under this window shows frequencies of sound spectrum. The long vertical red lines in this window show the working frequencies of the decoder filters.

In **FAX** mode these lines show "black" and "white" frequencies. To change the center frequency, click on the desired frequency (probably between the peaks).

The bottom window shows an oscillogram of the decoded signal. This window can be hide by the "**Setup->View->Show oscillogram window**" option

The "**Setup->View->Logarithmic spectrogram scale**" option or **Alt-Z** hotkey switch spectrogram window between linear or logarithmic scale. Analogously, the "**Setup->View->Logarithmic oscillogram scale**" option or **Ctrl-Z** hotkey switch oscillogram scale. Logarithmic scale is more convenient usually, but it needs more computer resources.

The "**SQL**" button switches squelch on. The number to the left of the "SQL" button determines the squelch threshold. When squelch is switched on, the horizontal red line shows the squelch threshold in spectrogram window.

The "**AFC**" button (auto frequency control) adjusts the long red lines (working frequencies) to the closest peak frequencies. The numbers to the left of the AFC button determines the limits of AFC. The first number is **local deviation** in hertz, i.e. maximal deviation from current frequency. Second number is **global deviation** in hertz, i.e. maximal deviation from last user-selected frequency. User-selected frequencies are shown at spectrogram by short red lines .

In HF-FAX mode AFC works during phase lines receiving only. These phasing lines are transmitted just before real image transmitting. In NWR-SAME and GMDSS DSC VHF modes AFC doesn't work, because frequencies are defined by protocol specifications.

The "**Reverse/Normal**" button defines decoded signal polarity. For weather station you should use "**Normal**" position with **USB** receiver or "**Reverse**" position with **LSB** receiver in RTTY, NAVTEX, PACTOR-1 FEC and FAX modes. Amateur RTTY radio station and some commercial station use opposite polarity. In NWR-SAME mode this option is ignored.

The "**Mode**" menu selects a working mode (**RTTY, NAVTEX, HF-FAX, NWR-SAME, GMDSS DSC - HF, GMDSS DSC - VHF**).

Signal speed and frequency shift in RTTY mode are selected via the "**Speed**" and "**Shift**" menus respectively.

Weather stations use 50 Baud speed. They use 85 Hz shift in the longwave band and 450 Hz shift in shortwave bands usually. Amateur stations use 45 Baud speed and 170 Hz shift usually. Commercial stations use 50 Baud speed and 170 Hz shift usually.

The "Shift" menu is used to select normal deviation (800 Hz) or narrow deviation (300 Hz) in HF-FAX mode also. Narrow deviation is used at long wave band.

The "**Setup->Text->Fast synchronization in NAVTEX**" menu option define synchronization method in NAVTEX mode.

When this option is selected, program can synchronize with receiving signal much faster, because it doesn't need special idle symbols to do it. But there is chance to make incorrect synchronization in that case.

The "**OnTop**" button puts SeaTTY in front of all windows.

Received symbols are displayed on the second from top window. The menu option "**File->Clear Buffer**" clears this window. If the "**Setup->Text->Clear Rx window once a day**" option is selected, this window is cleared automatically at start of a day.

The program writes received symbols in raw log file in the "**RAW\_LOGS**" folder. A name of log file is date-stamped. For example, "**01-10-08.TXT**" is raw log file for 08 October 2001. If the "**Setup->Text->Put time-stamps in raw logs**" option is checked, SeaTTY writes receiving time at beginning of each string of a raw log file.

All weather messages and SAME headers start with "**ZCZC**" sequence and finish by "**NNNN**" sequence. SeaTTY finds these sequences in symbol stream and writes messages separately in the "**Messages**" folder. A name of message file is time-stamped. Four symbols after "ZCZC" sequence is **Station ID** in NAVTEX mode. Similar message ID is used in RTTY mode also. If station ID is found in a message, it is included in a filename.

For example, "**011121-225525-KA56.TXT**" is a message with station ID "KA56" saved at 22:55:25 on 21 November 2001.

To reduce chance to miss message for noise SeaTTY starts to write message if at least three symbols of "ZCZC" sequence is received.

In NWR-SAME mode SeaTTY writes voice messages to wave-files and headers to text files, for example "**011121-225525.WAV**" and "**011121-225525.TXT**".

Station ID filter can be enabled at "Setup/Filters" page. If "**Use ID filter in RTTY**" option is selected, only messages with appropriate message ID are saved in RTTY mode. Analogously, if "**Use ID filter in NAVTEX**" option is selected, only messages with appropriate station ID are saved in NAVTEX mode. Filter list includes 4-symbols mask, which can consist of

digits, letters, "?" and "#" symbols. "?" means "any symbol", "#" means "any digit". **"Add"** button adds filter mask to the list, **"Delete"** button deletes mask from the list.

If the **"Setup->Filters->Don't save SYNOP messages"** option is selected, SeaTTY doesn't save **SYNOP** messages. These messages are not human-readable and consist of groups of digits.

If message was started or stopped manually, it is saved nevertheless filter settings.

The **"Setup->Text->Use UTC time"** option defines if the program use UTC or local time.

The **"Start"** button is used to start message receiving manually, without "ZCZC" header. The same button has **"Stop"** caption while message receiving and can be used to stop message receiving before "NNNN" footer.

Images received in HF-FAX modes are saved in "Messages" folder also. For example, **"030710-153027.PNG"** is an image saved at 15:30:27 on 10 July 2003.

The left bottom window shows a tree of received messages and images. The right bottom window shows a text of selected message or preview of selected image. **"M-"** and **"M+"** buttons are used to change the scale of images.

To open message file in a text editor, open image file in an image editor or to play voice message, make double-click at the message window or at the tree window. If date is selected raw log file opens.

To delete message or image, select it and press **"Delete"** key. To delete all messages and images for one day, select desired date in the tree and press "Delete" key.

The option **"Unshift On Space"** is switched on and off via the **"Setup->Text->Unshift on space"** menu. When that option is selected, receiving symbol shift is switched to a "Letters" after receiving "Space" or "Line Feed" symbol.

Manual switching of receiving symbol shift can be made by keyboard. Gray "\*" or Alt-(gray "\*") is Figures and gray "-" or Alt-(gray "-") is Letters.

The options **"Setup->Text->RTTY alphabet->English charset"**, **"Setup->Text->RTTY alphabet->Russian charset"**, **"Setup->Text->RTTY alphabet->Swedish Charset"** and **"Setup-**

**>Text->RTTY alphabet->English/Russian Extended charset"** select the alphabet to be used.

The "**Setup->Text->Extended Baudot**" option switches on the extended code table (with high and low letters).

The "**File->Open Wave Capture File**" command opens wave-file to save all received from soundcard sound. File is closed by the "**File->Close Wave Capture File**" command. The hotkey for these commands is **Alt-V**. Take to attention that a minute of sound recording need above 1 MByte disk space.

SeaTTY can decode signals from a WAVE-file. Desired file is selected by the "**File->Decode From File**" command.

A WAVE-file must be Windows PCM file, without compression. A sample rate must be 11025, 22050 or 44100 Hz. Preferred file parameters are mono, 16 bit, 11025 Hz.

The windows appearance can be changed at the "**Setup->Fonts & colors**" page.

There are two methods to correct sound card sampling rate variation against nominal frequency (**11025 Hz**). The first method is the **SamplingFreq** parameter of the [RTTY] section of the SEATTY.INI file, f.e. **SamplingFreq=11020.56** . The second way is **/s** parameter of the command line, f.e. **SEATTY.EXE /s 11030.5** . Any of these parameters define real sampling frequency. When both parameters are defined, the command line parameter has priority. SeaTTY can calculate and save real sampling frequency automatically during **slant correction** in HF-FAX mode. See details [there](#).

Selected options of the program are saved by "**Setup->Save**" button. Options are written into the file **SEATTY.INI** . The program looks for this file in the working directory. If SEATTY.INI file is not found in a working directory, working directory is changed to a default value. You can have several variants of the ini-file for different situations. Just create several shortcuts to **SEATTY.EXE** each with a different working directory and copy SEATTY.INI file to each of this directories.

In HF-FAX mode additional window is opened.

"**Auto S.**" button switch on "**Auto Start / Auto Stop**" mode. When this button is pressed and special start signal (**APT** tone) is received SeaTTY begins to receive image automatically. If this button is pressed and stop signal is received, SeaTTY stops receiving and save image automatically.

The start signal is black/white sequence with frequency of 300 or 675 Hz . The stop signal is black/white sequence with frequency of 450 Hz.

To start receiving manually, click on "**Start**" button. If you click on "Start" button while image receiving, received image will be dropped and receiving will be re-started.

To stop receiving manually, click on "**Stop**" button. Manually stopped image is not saved automatically. To save manually stopped or changed image, click on "**Save**" button.

"->||<-" button is used to rotate image horizontally if image is not synchronized properly. Click to this button, then click to point of image which should be moved to left side of image (start of line). Click on "Save" button to save changed image.

"<-/|\>" button is used for slant correction. Vertical lines of received image are slanted when sound card sampling frequency difference from nominal one. Slant correction, at first, fix received image and, at second, calculate real sampling frequency to avoid slant distortion in future receiving.

To make slant correction you need to have received image in receiving window. Receiving should be stopped. Find a line which should be vertical on an image. Click on the slant correction button. Click on the start of this line, then click on the end of this line. SeaTTY will ask if it must save calculated sampling frequency to the ini-file. Select "Yes" to apply changes and save calculated frequency to ini-file. Select "No" to apply changes, but not save calculated frequency to ini-file. At least, click "Cancel" to cancel changes. Click on "Save" button if your want to save changed image.

SeaTTY tries to define transmission speed in lines per minute (LPM) and image resolution (index of cooperation - IOC) automatically. If automatic detection is fail, SeaTTY use values from **LPM** and **IOC** fields.

"**M-**" and "**M+**" buttons are used to change the scale of receiving image.

In the status line of the window image scale, LPM and IOC are shown. There are short messages about receiving process also.