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OVERVIEW

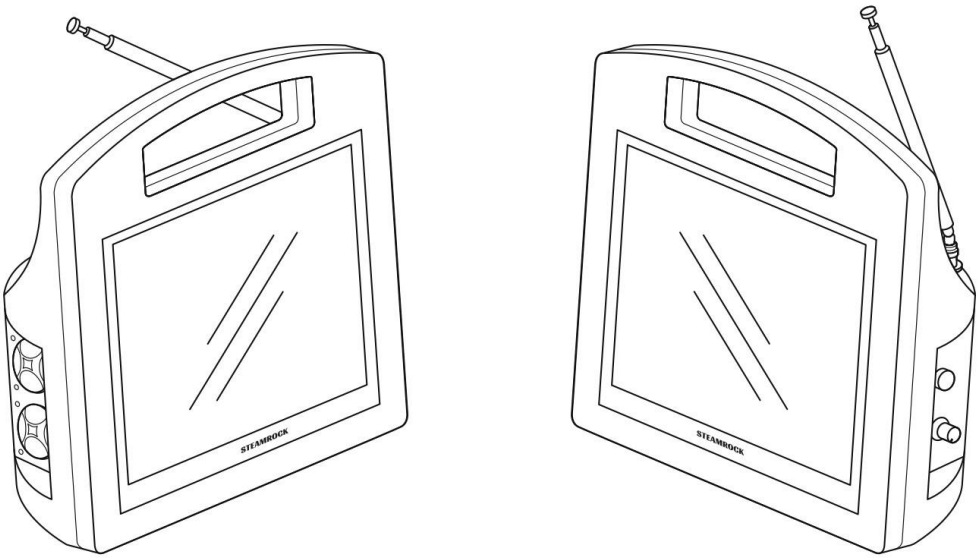
Thank you for purchasing the SR-97, the first portable e-paper WEATHER FAX / RTTY / NBDP / HF SSB RECEIVER on the market. The SR-97 is a sturdy device designed for use by serious offshore cruisers who have a need for free valuable meteorological data transmitted by reliable weather organizations and want it displayed on a screen that is easy-to-read even in bright sunlight. The SR-97 is perfect for those who prefer not to fidget with complicated set ups, messy wiring, PC connections and compatibility issues, software updates, or subscription fees. It has an uncannily intuitive no-nonsense user-friendly touch screen interface and a protected internal speaker that provides a decent level of sound.

This multi-functional device has the following functions:

- **A Weather Fax Receiver** which is preset with maritime stations and their known frequencies, set to automatically or manually receive images in 16 gradients of gray, and capable of storing 200 received radiofax pages in an internal non-volatile memory.
- **An RTTY / NBDP Text Receiver** also preset with radioteletype maritime stations and their known frequencies and capable of storing 190 received text pages in an internal non-volatile memory.
- **A VOLMET Receiver** which has 29 preset VOLMET stations with their known frequencies and is equipped with a record and playback function allowing you to record up to 8 minutes of a voiced broadcast.
- **An HF SSB Receiver** capable of receiving in LSB or USB mode and also equipped with a quickly accessible record and playback function.
- **A Sensitive Barometer / Barograph** with atmospheric pressure and tendency threshold warnings that go off on any screen on the device regardless of whether it is switched on or off.
- **A Multi Time Zone Clock** preset with all the world time zones you can choose from and UTC, LOCAL, and HOME clocks displayed on one screen. It has two alarms that go off on any screen regardless of whether the device is switched on or off as well as a timer.
- **A Moon Calendar** that displays the phases and shapes of the moon and an assessment of nighttime illumination.
- **A Calculator/Unit Converter** with the most common conversions a boat owner might need, easily used with a simple touch of a button.

Although you may be using other technologies for obtaining weather data, this very practical device can serve as a reliable backup reference utilizing well-proven technologies employed for decades for maritime purposes. No internet connection required. The SR-97 is a stand-alone device powered independently from your boat's battery bank. It has IP67 battery compartments and is generally protected against splashing water. It is easy to hold with your hands and manipulate with your thumbs at the same time. It has a very sturdy case made of 3mm ABS. Although the device is well-balanced and steady, its handle is strong enough to be used for lashing when the boat is underway if needed. It has a compact replaceable telescopic antenna with a BNC connector, guaranteeing continued use of the device if something should happen to the antenna.

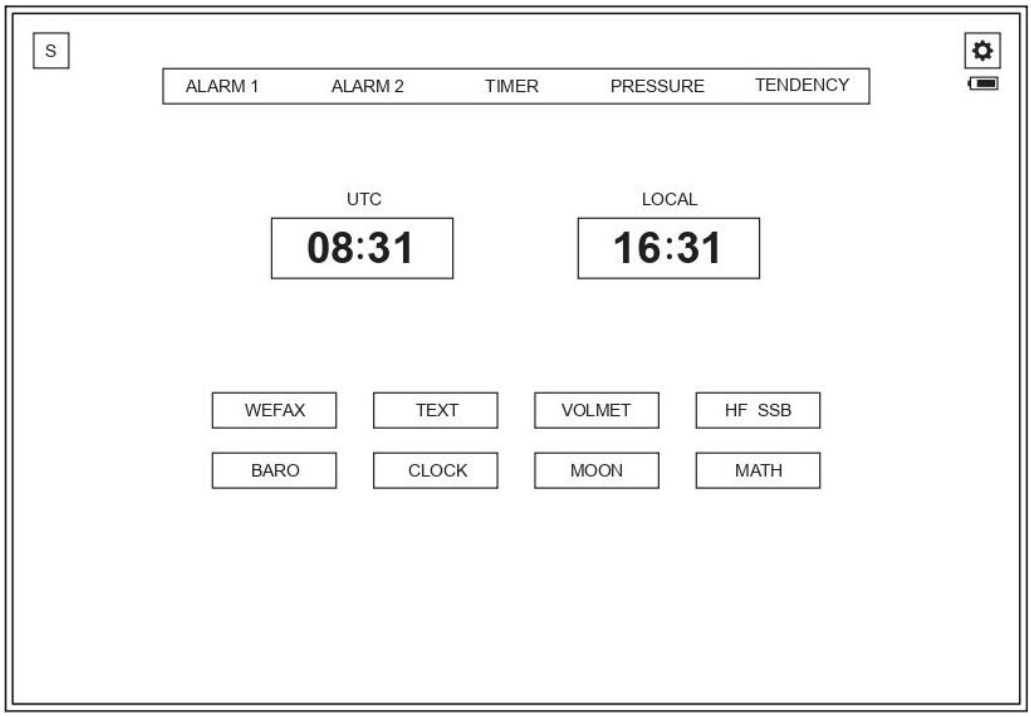
GETTING STARTED



This device uses four alkaline D size batteries. The two battery compartments are located on the left side of the device. To insert the batteries, twist each cover counterclockwise a quarter turn and remove it. Put two batteries into each compartment **positive terminals pointing outwards**. Replace the covers.

On the right side of the device are a water repellant pressure equalization valve and a power/volume control knob below it. To turn the device on, turn the knob clockwise. You will hear a beep. A few seconds later, the home screen will be displayed, and you will hear a second beep. The device is ready for use.

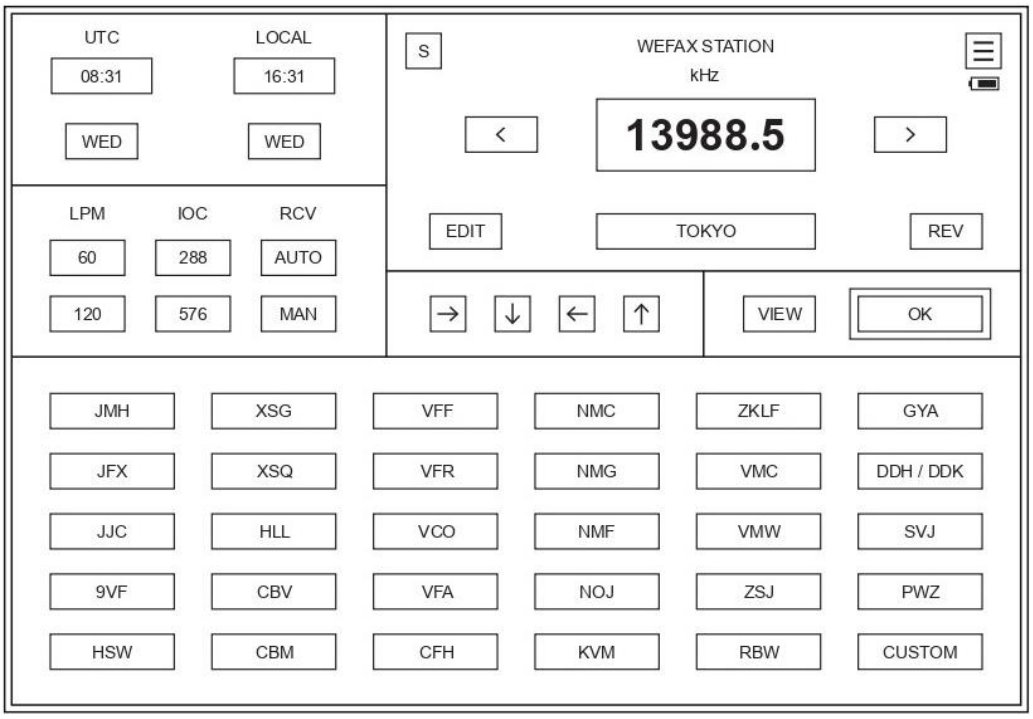
HOME SCREEN



The Home Screen is the first screen you see after you turn on the device. It has two clock windows for UTC and LOCAL time. Below the time windows are the function choice buttons. This device will beep each time you touch a button or any active screen area. Note that if you hear a triple beep when you touch a particular button, it is warning that this operation is not valid. In the top left corner is a silent button 'S' used to mute these beeps. On the home screen, the 'S' button mutes all beeps on the device. On the other screens, it only mutes the beeps of the function you are using. It does not affect the sounding of alarms or speaker volume. In the top right corner is a settings button , which will take you to the Settings Screen. Below that button is a battery indicator. Please, note that the settings button will be replaced with a 'return to previous screen' button on all other screens.

Between the silent button and the settings button is an alarm indicator window. This window has indicators for two alarm clocks, a timer, an atmospheric pressure threshold alarm, and a pressure tendency threshold alarm. When any alarm is not engaged, its indicator will be faded. When engaged, it will be bolded. When an alarm is triggered, the background behind its indicator will be blackened, allowing you to know that an alarm has gone off whether you have heard it or not.

WEATHER FAX RECEIVER FUNCTION



The Weather Fax Screen allows you to choose which radiofax station you want to receive broadcasted images from and to set reception parameters. The device will store these settings for each station independently.

The Time Frame has a UTC box and a LOCAL time box as well as boxes for day of week.

The Select Station Frame, located on the bottom half of the screen, has 30 buttons, which are 29 preset station buttons and one ‘CUSTOM’ button. To choose a station, just touch one of the station buttons. The geographical location and the frequency you used for that station the last time will all appear automatically. Each station is indicated by its call sign (e.g., JMH, NMC). If you want to store a new station or certain frequencies not found in the Select Station Frame, you can do so in the ‘CUSTOM’ button. In total, the device can store up to 180 radiofax frequencies, including six in the ‘CUSTOM’ button.

The Reception Setting Frame, located just above the Select Station Frame on the left, allows you to set the LPM (Lines per Minute), IOC (Index of Cooperation), and set the device to receive (RCV) broadcasts automatically (AUTO) or manually (MAN). In AUTO mode, the device will automatically detect LPM and IOC once the radiofax broadcast starts and the phasing signal is received. AUTO mode is more convenient because you do not need to listen for the signal to start receiving, but it uses slightly more battery power on standby.

The Orientation Frame, the frame with arrow buttons located in the center of the screen, allows you to set the edge of the screen the image will start being drawn from. This is important because different stations transmit the images in different formats and orientations. The image will be received and stored with the orientation you have chosen.

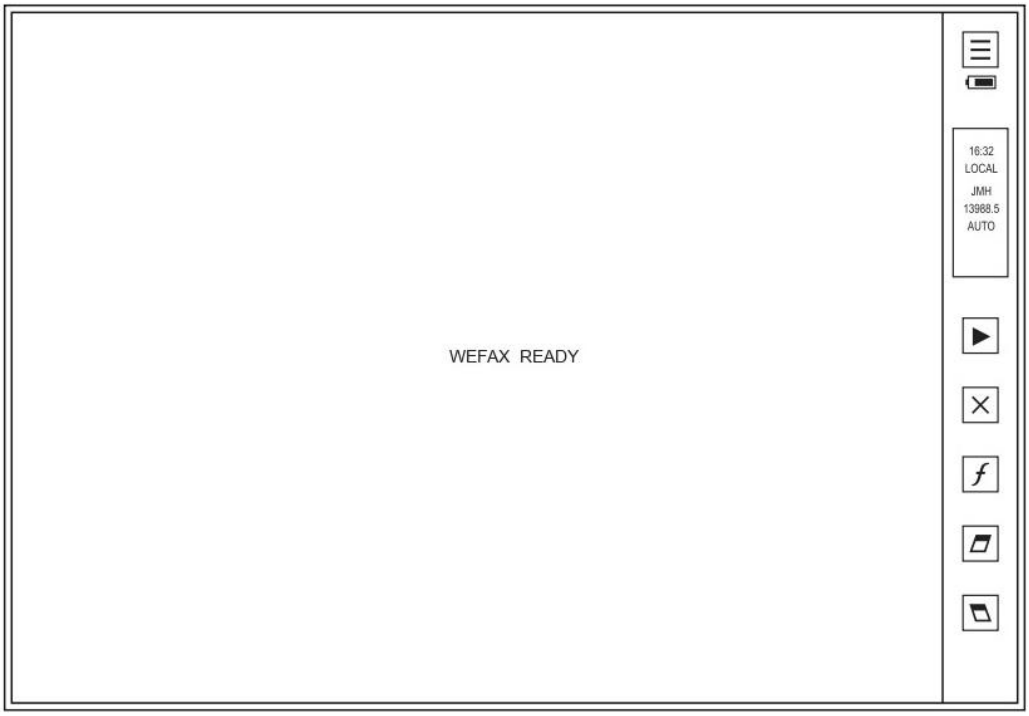
The Wefax Station Frame, which is located in the upper righthand corner of the screen, shows the preset center frequency in kHz (as announced in station schedules) in bolded numbers in the frequency window. The geographical location of the station is displayed in the smaller window below. The arrow buttons to the left and right of the frequency window allow you to choose one of the station's alternate preset frequencies, the one with the best signal. The device is preset to six frequencies for each station regardless of how many frequencies the station actually uses. A bolded '10000.0' in the frequency window means 'no preset frequency'. Consider this a placeholder. You can add a frequency here if you need to with the use of the editing function.

To add or edit the frequency choices within the 3 – 30 MHz range, just touch the 'EDIT' button. Plus and minus buttons will appear, and the background behind the number to change will blacken. The plus button adds a number and the minus button subtracts a number. You can move to the next number in the sequence by touching the arrow buttons to the left or right of the frequency window. Once you have the numbers you want, touch the 'EDIT' button again. This will save the frequency choice and exit the editing mode.

Please, note that there is a Reverse 'REV' button in the lower righthand side of the frame. If you depress this button, the image will be received in negative form with dark background and light lines.

The Image Receive/Review Frame has two buttons, 'OK' and 'VIEW'. The 'OK' button takes you to a weather fax receiving screen. The 'VIEW' button takes you to a list of stored images.

RECEIVING WEATHER FAXES



The Weather Fax Receiving Screen is an empty screen with a 'WEFAX READY' message in the center and side panel on the right. Apart from the 'return to the previous screen' button and the battery indicator on the top of that panel, you will see a small box telling you the local time, station name, frequency, and receiving mode (AUTO or MAN). Below this box is the start receiving button , the delete button , the frequency button , and the slant correction buttons and , which are used to correct image slanting distortions.

When receiving the weather fax in automatic (AUTO) mode, you do not need to touch the start button. The device will start automatically once it detects an Automatic Picture Transmission (APT) signal. The screen will display an 'APT DETECTED' message until the station's phasing signal starts being transmitted. At this time, the device will display a 'SYNCHRONIZING' message. Once synchronized, the device will begin decoding and drawing the image, automatically applying the LPM and IOC it detects. Note that if you have missed the start signal or it was not properly detected, you can still initiate reception by touching .

If the signal is good and synchronization successful, the image will be properly centered on the screen. If signal interference affects synchronization, then the image may not be centered properly on the screen and you will observe a thick black line beginning to split the image. You can center the remainder of the image by touching this black line near the starting edge of the image. In a few instances, some stations do not use this black line. In this case, you can wait a minute or two to see if the image is being centered or being improperly split. You can touch the split area near the beginning of the image and the device will begin centering properly. Touch it one time only and wait for it to draw a few lines before you decide further adjustment is needed.

In addition, while the device is receiving, if the image is stretched or compressed, the wrong IOC has been selected. If the image is either halved or duplicated on the screen, the wrong LPM has been selected.

If you are receiving in manual (MAN) mode, all parameters you previously set using the Weather Fax Screen are applied. To begin receiving, touch the start button and center the image as described above.

Note that a small 'RCV' indicator will appear at the bottom of the small box in the side panel on the right when the device is receiving and the ▶ button will be replaced with a stop button ■.

While the device is receiving, you can change station frequency without returning to the Weather Fax Screen by touching *f*. The device will move from one available frequency to the next with each touch of this button. The frequency is indicated in the small box in the side panel on the right.

Also, during reception, there may be some slanting in the image. This can be corrected by touching one of the two slant correction buttons, ▱ and ▱. These buttons adjust slanting in small increments. Because it takes time for the device to draw the images, refrain from pushing these buttons too many times. Touch them once and wait to see the effect on the image before deciding whether to adjust the slant some more. Note the slant setting you choose is stored independently for each station.

Weather fax receiving is stopped in three ways.

First, you can stop receiving the transmission anytime by touching ■ regardless of whether you are using AUTO or MAN mode. After you stop it, you will notice that the small 'RCV' indicator at the bottom of the small box in the side panel will be replaced with 'SAVE?' and simultaneously the stop button will be replaced with a save button ☑. You must save the image by touching ☑ or delete the image by touching ☒ to continue using the device.

Second, radiofax stations will usually emit a stop signal at the end of their transmissions. Regardless of whether the device is set on AUTO or MAN mode, it will stop receiving when it detects this signal. If set on AUTO mode, the device will stop, save, clear the screen, and return to 'WEFAX READY'. If set on MAN mode, the device will keep the received image on the screen without saving it. You will need to touch ☑ to save the image or ☒ to delete it.

Third, when the maximum number of pages the device has been preset to receive during one transmission has been reached, it will stop receiving. You can set this number using the Set Up Screen. The image(s) will be saved and the screen will be cleared, even when the device is set in MAN mode. This feature ensures that the device does not keep receiving an unlimited number of pages if a station's stop signal is not detected.

The device stores up to 200 images. Note that if a received image exceeds the size of the screen, it will be stored across two or more screens, unless the remainder of the image is very short. When the 200 maximum is exceeded while receiving, any new image will delete the oldest one and store the current one at the top of list.

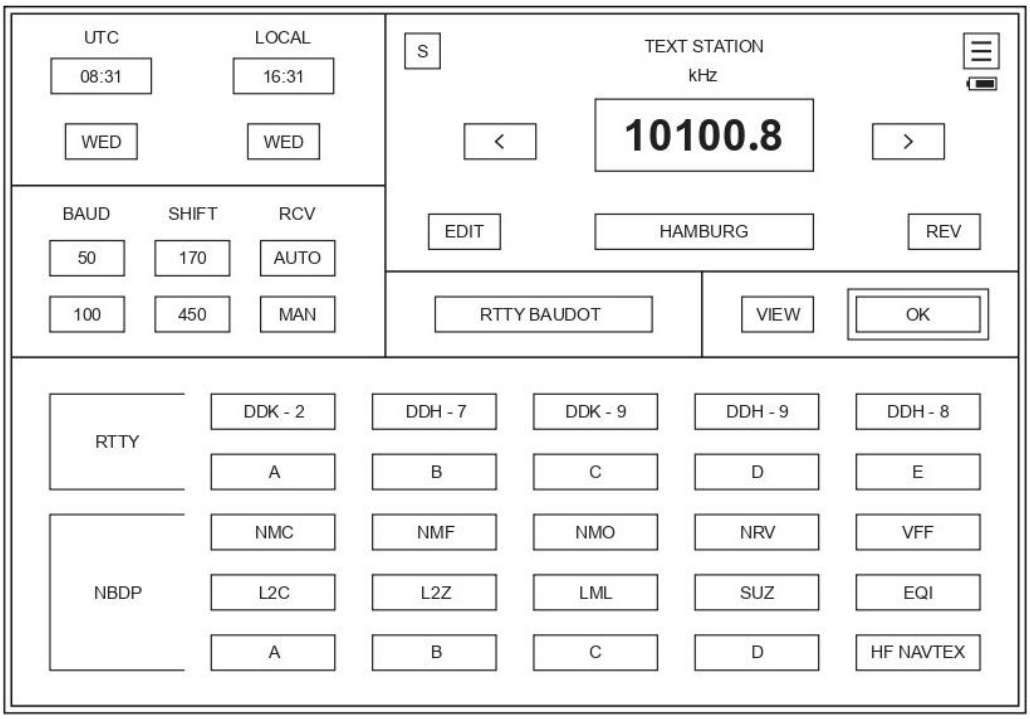
REVIEWING STORED IMAGES

The Weather Fax Review List Screen displays a list of 20 stored radiofax images on each page, showing the name of the stations, dates, and reception starting times. The ten buttons on the right refer to 10 review list screens, each containing stored 20 images. All saved images are stored in reverse chronological order, the top being the most recent.

To view a specific stored image, just touch the item displaying its station and receiving time. The stored image will be displayed and two additional arrow buttons will appear in the side panel on the right. These two buttons allow you to browse previous and following images without having to return to the list. If you want to return to the list, touch ☰. The last viewed item will be highlighted on the list.

Note that stored images cannot be modified.

TEXT (RTTY / NBDP) RECEIVER FUNCTION



The Text Screen allows you choose among stations transmitting navigational warnings and weather information in the form of text broadcasts, either RTTY or NBDP, and set reception parameters. The device will store these settings for each station independently.

The Time Frame has a UTC box and a LOCAL time box as well as boxes for day of week.

The Select Station Frame, located on the bottom half of the screen, has 25 buttons. The first two rows are buttons for RTTY stations, five factory preset German DWD RTTY buttons and five (A, B, C etc.) for you to custom set. The last three rows are buttons for NBDP stations, ten preset buttons (including USCG stations), four buttons for you to custom set, and one button for HF NAVTEX. To choose a station, just touch one of station buttons. The geographical location for the preset stations and the frequency you used for that station the last time will all appear automatically. Each preset station is indicated by its call sign (e.g., DDK-2, NMC, etc.). If you want to store a new station or certain frequencies not found in the select station frame, you can do so in the custom (A, B, C, etc.) buttons.

The Reception Setting Frame, which is located just above the Select Station Frame on the left, allows you to choose the Baud rate (BAUD) and Shift (SHIFT) as well as set the device to receive (RCV) broadcasts automatically (AUTO) or manually (MAN).

The Text Station Frame, located in the upper righthand corner of the screen, shows the preset center frequency in kHz (as announced in station schedules) in bolded numbers in the frequency window. The geographical locations of the factory preset stations are displayed in the smaller window below. The arrow buttons to the left and right of the frequency window allow you to choose among one of the station's alternate frequencies, if available.

The device is preset with as many as six frequencies for each station regardless of how many frequencies the station actually uses except for the German DWD stations and HF NAVTEX, which have one frequency each. A bolded ‘10000.0’ in the frequency window means ‘no preset frequency’. Consider this a placeholder. You can add a frequency here if needed with the use of the editing function.

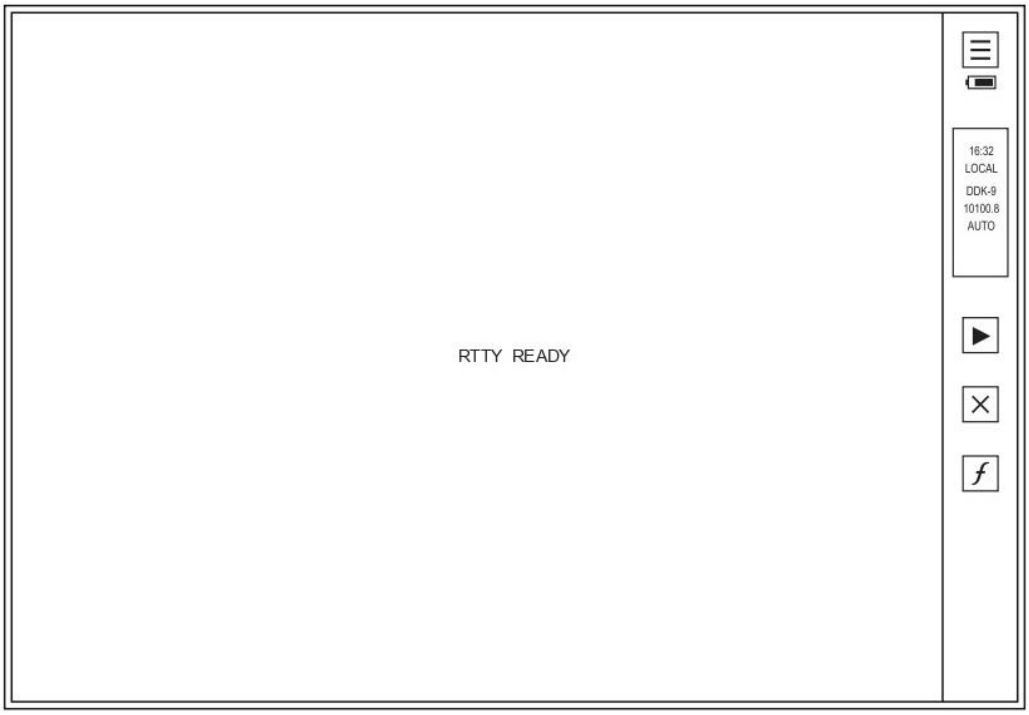
To add or edit the frequencies within the 3 – 30 MHz range, just touch the ‘EDIT’ button. Plus and minus buttons will appear, and the background behind the number to be changed will blacken. The plus button adds a number and the minus button subtracts a number. You can move to the next number in the sequence by touching the arrow buttons to the left or right of the frequency window. Once you have the numbers you want, touch the ‘EDIT’ button again. This will save the frequency choice and exit the editing mode.

The ‘REV’ button is used to swap mark and space when the text is being transmitted in reverse shift mode, which may be case if you notice the text being received is unintelligible.

The Text Mode Frame will display either ‘RTTY BAUDOT’ or ‘NBDP FEC’, reminding you which decoding mode is being used.

The Text Receive/Review Frame has two buttons, ‘OK’ and ‘VIEW’. The ‘OK’ button takes you to a text receiving screen. Touch the ‘VIEW’ button to access a list of stored text transmissions.

RECEIVING TEXTS



The Text Receiving Screen is an empty screen with a 'RTTY READY' or 'NBDP READY' message in the center and a side panel on the right. Apart from the 'return to previous screen' button ☰ and the battery indicator on the top of that panel, you will see a small box telling you the local time, station name, frequency, and receiving mode (AUTO or MAN). Below this box is the start receiving button ▶, the delete button ✕, and the frequency button ƒ.

When receiving the text messages in automatic (AUTO) mode, you do not need to touch the start button. The device will start automatically when it detects a RTTY or NBDP signal. Once started, it will begin synchronizing. Once synchronized, it will begin receiving. Note that if it does not start automatically for any reason, you can initiate reception by touching the start button.

If the signal is good, the device will begin receiving, decoding the text message, and displaying it on the screen. Please, note that if the signal is weak or noisy, the device may not start receiving automatically.

Please, note that while the device is receiving, if the text is unintelligible, this may be because an incorrect Baud rate and/or Shift has been selected.

If you are receiving in manual (MAN) mode, all parameters you previously set using the Text Screen are applied. To begin receiving, touch the start button.

Note that a small 'RCV' indicator will appear at the bottom of the small box in the side panel on the right when the device is receiving and the ▶ button will be replaced with a stop button ■.

While the device is receiving, you can change station frequencies without returning to the Text Screen by touching [f] . The device will move from one available frequency to the next with each touch of this button. The frequency is indicated in the small box in the side panel on the right.
Text receiving is stopped in three ways.

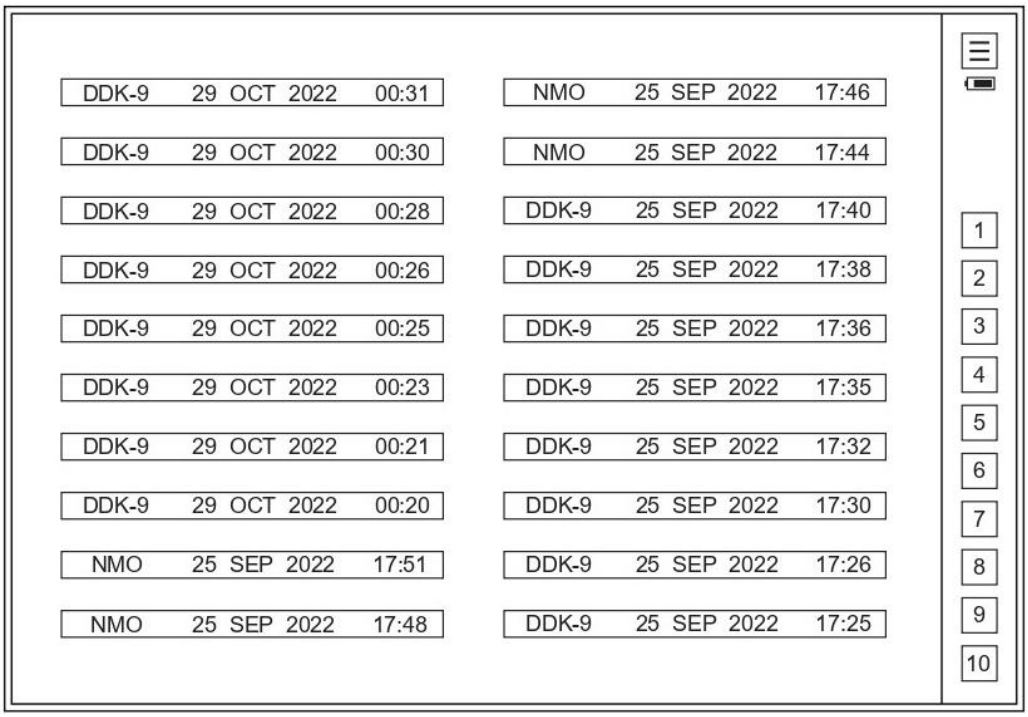
First, you can stop receiving the transmission anytime by touching [■] regardless of whether you are using AUTO or MAN mode. After you stop it, you will notice that the small 'RCV' indicator at the bottom of the small box in the side panel will be replaced with 'SAVE?' and simultaneously the stop button with be replaced with a save button [√] . You must save the text by touching [√] or delete the text by touching [×] to continue using the device. Once you have saved or deleted the text, if the AUTO mode is engaged, the device will resume receiving if you do not return to the Text Screen within two or three seconds.

Second, regardless of whether the device is set on AUTO or MAN mode, it will stop receiving when the station stops transmitting or when the signal is lost due to interference or noise. If set on AUTO mode, the device will stop, save, and clear the screen. If set on MAN mode, the device will keep the last page of the received text displayed on the screen without saving it. You will need to touch [√] to save it or [×] to delete it.

Third, when the maximum number of text pages the device has been pre-set to receive during one transmission has been reached, the device will stop receiving during the current transmission. You can set this number using the Settings Screen. The text will be saved and the screen will be cleared, even when the device is set in MAN mode. This feature ensures that the device does not keep receiving an unlimited number of pages.

The device stores up to 190 text pages. Note that if a received text message exceeds the size of one page, it will be stored across two or more pages, depending on the length. When the 190 maximum is exceeded while receiving, any new text page will delete the oldest one and store the current one at the top of list.

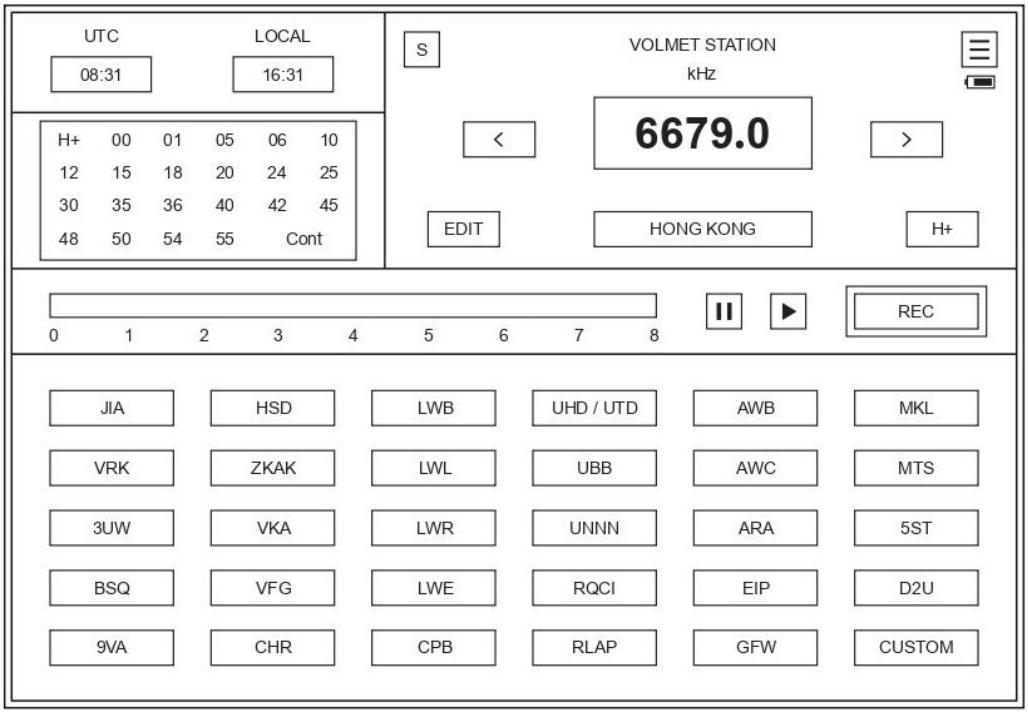
REVIEWING STORED TEXTS



The Text Review List Screen displays a list of 20 stored text pages, showing the name of the stations, dates, and reception starting times. The ten buttons on the right refer to 10 review list screens, each containing stored 20 text pages. All saved text pages are stored in reverse chronological order, the top being the most recent.

To view a specific stored text, just touch the item corresponding to the station and time of that text transmission. The stored text will be displayed and two additional arrow buttons will appear in the side panel on the right. These two buttons allow you to browse previous and following pages without having to return to the list. If you want to return to the list, touch ☰. The last viewed item will be highlighted on the list.

VOLMET RECEIVER FUNCTION



The VOLMET Screen gives you convenient access to international voice-broadcasted weather reports and forecasts for wide but relevant navigational areas. Although used for aviation, these broadcasts can be useful for mariners wanting a broad picture of the weather in a region.

The Time Frame has a UTC box and a LOCAL time box.

The Broadcast Schedule Frame for the chosen VOLMET station is just below the Time Frame. When you choose another station, that station's schedule appears automatically. To read the schedule, just look at the darkened numbers (minutes). For example, a darkened '15' and a darkened '45' will indicate that the station's broadcast will begin at 15 and 45 minutes past each hour. If there is a darkened 'Cont' indicator in the lower righthand corner of this frame, the station you have chosen is running a continuous broadcast. You can edit the scheduled times if needed and if you have access to the new schedule.

The Select Station Frame has 30 buttons, which are 29 preset VOLMET station buttons and one 'CUSTOM' button. To choose a station, just touch one of station buttons. The geographical location, the last used frequency, and the broadcast schedule of that station will all appear automatically. Each station is indicated by its call sign (e.g., JIA, VRK). You can store one new schedule and four frequencies under the 'CUSTOM' button. In total, the device can store up to 120 VOLMET frequencies.

The VOLMET Station Frame shows the current radio frequency in kHz in bolded numbers in the frequency window. The geographical location of the station is displayed in the smaller window below. The arrow buttons to the left and right of the frequency window allow you to choose one of the station's alternate preset frequencies, the one with the best signal. The device is preset to four frequencies for each station regardless of how many frequencies the

station actually uses. A bolded ‘10000.0’ in the frequency window means ‘no preset frequency’. Consider this a placeholder. You can add a frequency here if you need to.

To add or edit the frequency choices within the 3 – 30 MHz range, just touch the ‘EDIT’ button. Plus and minus buttons will appear, and the background behind the number to be changed will blacken. The plus button adds a number and the minus button subtracts a number. You can move to the next number in the sequence by touching the arrows to the left or right of the frequency window. Once you have the numbers you want, you can go on to edit the station schedule or press the ‘EDIT’ button again, which will save the frequency choice and exit the editing mode.

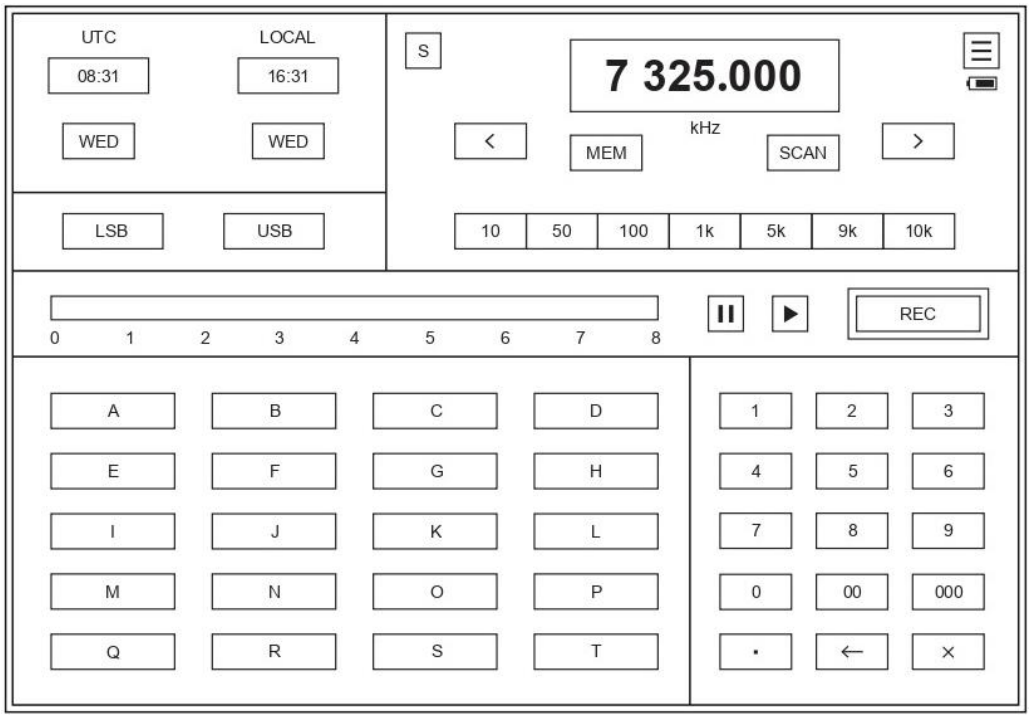
To edit the station schedule, make sure the ‘EDIT’ button is depressed and then touch the ‘H+’ button in the lower righthand corner of the VOLMET Station Frame. You can then choose the preset minutes past the hour in the schedule frame by touching them. A bolded number indicates it has been selected. Once you have selected the ones you want, you can either touch the ‘H+’ button to return to editing the frequencies or touch the ‘EDIT’ button to accept all changes and exit the editing mode.

Please, note that VOLMET stations in the same geographic area share the same frequencies but at different times, so you need to check the broadcast schedule frame to make sure the time of the transmission you are hearing matches the scheduled time. If not, then you will be listening to a transmission from a VOLMET station different than the one displayed.
Note the device is receiving in USB mode while you are using the VOLMET function.

The Record & Playback Frame is just above the Select Station Frame. Sometimes, due to noise or interference, it is difficult to totally understand a broadcast during one listening session. Thus, it would be very useful to have a recording of it to listen to as many times as you want. The Record & Playback Frame is easy to recognize by the numbers 0 to 8 (minutes) below a timeline and a pause button ⏸, playback button ▶, and the larger ‘REC’ button to the right. To begin recording one voiced broadcast, just touch the ‘REC’ button, which will be replaced with a ‘STOP’ button while the device is recording. The device will record an ongoing broadcast for up to 8 minutes, progress indicated by a blackening of the timeline. If you do not stop the recording manually (by touching the ‘STOP’ button), the device will stop recording automatically after 8 minutes.

To play back, touch ▶. The playback will start from the beginning. If you want to re-listen to one section of the recording again or move forward to a later section, just touch timeline around that section. Note that the word ‘PLAYBACK’ will appear in the frequency window to remind you are listening to a recording, not to an ongoing broadcast. Also note that only one recording is stored, and it will remain stored (regardless of power status) until is it overwritten with a new recording.

HF SSB RECEIVER FUNCTION



HF SSB Receiver Screen allows you to receive HF SSB voice broadcasts in LSB or USB mode within the 3 to 30 MHz range.

The Time Frame has a UTC box and a LOCAL time box as well as boxes for day of week.

The Mode Frame allows you to choose between LSB or USB modes.

The Tuning Frame shows the current radio frequency in kHz in bolded numbers in the frequency window. The arrow buttons to the left and right of the frequency window can be used either for tuning or for scanning if you touch the ‘SCAN’ button first. The available steps are 10, 50, and 100 Hz and 1, 5, 9, and 10 kHz, chosen using the buttons in the row below. Although the SCAN does not stop automatically, you can easily stop scanning by touching one of the arrow buttons. This pauses it but keeps it in scan mode. If you want to stop the scan and leave scan mode, then just touch the ‘SCAN’ button again.

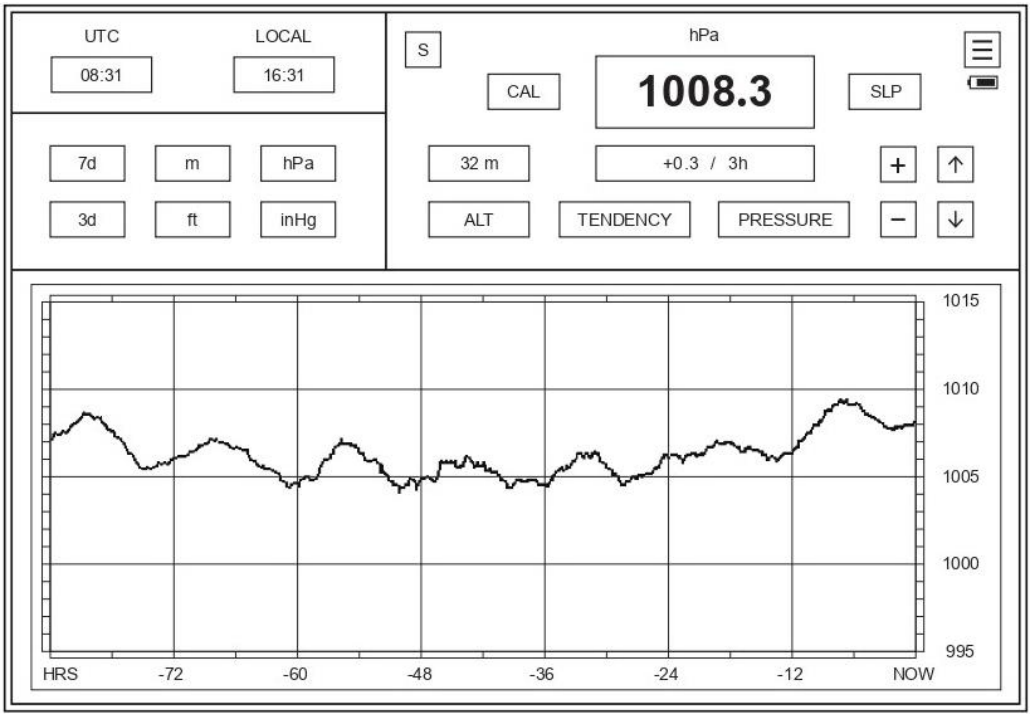
The ‘MEM’ button is used to store a particular frequency in the device’s internal non-volatile memory. To store one, just touch this button and then touch one of the twenty memory slot buttons labelled ‘A’ to ‘T’ in the Memory Frame below.

The Memory Frame is where you can store frequencies in 40 memory slots, including 20 for USB and 20 for LSB. How to store frequencies has been mentioned above. To avoid overwriting a stored frequency that you may not want to lose, you can first store the frequency you want in the temporary (T) memory slot. Then, find a memory slot you want to use and, in the following order, touch the ‘T’ slot button, the ‘MEM’ button, and the chosen slot button. By default, all memory slots read ‘10000.0’.

The Keypad Frame in the lower righthand corner of the screen is used to directly enter a specific frequency in kHz. The [×] button cancels the operation, and the [←] button allows you to cancel the last digit you entered. There is a decimal point button for you to use because you are entering in kHz, not Hz. Please note that if you attempt to enter a frequency outside the range of the device, you will hear a quick triple beep warning.

The Record & Playback Frame is just below the Tuning Frame. It is easy to recognize by the numbers 0 to 8 (minutes) below a timeline and a pause button [II], playback button [▶], and the larger 'REC' button to the right. To begin recording one voiced broadcast, just touch the 'REC' button, which will be replaced with a 'STOP' button while the device is recording. The device will record the ongoing broadcast for up to 8 minutes, progress indicated by a blackening of the timeline. If you do not stop the recording manually (by touching the 'STOP' button), the device will stop recording automatically after 8 minutes. To play back, touch [▶]. Playback will start from the beginning. If you want to re-listen to one section of the recording again or move forward to a later section, just touch timeline around that section. Note that the word 'PLAYBACK' will appear in the frequency window to remind you are listening to a recording, not to an ongoing broadcast. Also note that only one recording is stored, and it will remain stored (regardless of power status) until is it overwritten with a new recording.

BAROMETER / BAROGRAPH FUNCTION



The Barometer Screen displays current atmospheric pressure and its changes up to 7 days. It has atmospheric pressure and tendency alarms that you can preset. These alarms keep you aware of significant weather changes whether or not you are using the Barometer function and even when the device is turned off.

The Time Frame has a UTC box and a LOCAL time box.

The Time Period and Unit Choice Frame has three sets of buttons. On the left are two buttons, one for a 3-day period and the other for 7 days. In the middle are altitude unit choice buttons, meters or feet. On the right are the two most commonly used pressure unit choice buttons for weather monitoring, hPa or inHg.

The Information and Control Frame displays current data updated every ten minutes. The current pressure in hPA or inHg is reduced to sea level and displayed in bold numbers in the large window in the middle. Atmospheric pressure change in numerical terms over the past 3 hours is displayed in the smaller window below it.

The ‘CAL’ button is used to calibrate the device’s built-in barometric pressure sensor. Your device is shipped with the calibration setting already preset. You may want to introduce your own calibration, for example, when you see the readings are slightly differing from a local trusted source or if you need to adjust for normal sensor drift. To do this, you will first need to make sure the altitude is set correctly against an accurate trustworthy source. Once you touch the ‘CAL’ button, the background of the number to be adjusted is blackened. To change these numbers, touch the plus-minus buttons or arrow buttons on the right side of the frame. The calibration will take effect once you touch the ‘CAL’ button again. Once it is touched, the pressure window, the tendency window, and the graph below will be automatically updated.

Please note that the small window to the right of the pressure display window tells whether you are looking at pressure reduced to sea level (SLP) unless altitude is set to 0. If so, absolute pressure indicator (ABS) will be displayed in that small window.
To set the altitude (ALT), the procedure is similar. Once you touch the 'ALT' button, the background of the number to be adjusted is blackened. Go to the plus-minus buttons or arrow buttons on the right side of the frame to adjust the numbers, range -200m (-656ft) to 1000m (3280ft). Note that numbers cannot be set outside the device's preset limits. Touch the 'ALT' button again to save the settings.

You can choose whether you want to see atmospheric pressure or its tendency data on the graph below. All you do is touch the 'PRESSURE' or 'TENDENCY' button. Pressure tendency is the change in atmospheric pressure over the past 3 hours. The tendency graph shows how this change in pressure is changing over time. The pressure graph can be zoomed in and out and moved up and down with the plus-minus buttons or arrow buttons**.**

Note that if the atmospheric pressure has changed significantly since you last adjusted the graph position, the graph may have disappeared or extended beyond the screen. Just use plus-minus buttons for zooming in and out and the up and down arrow buttons to reposition the graph.

Be aware that if you have moved the device to a different altitude, the device has been reset, or the CAL/ALT has been adjusted, it will take three hours to get a fully accurate 3-hour pressure tendency. Also, please note you can completely clear the barometer records in the Settings Screen.

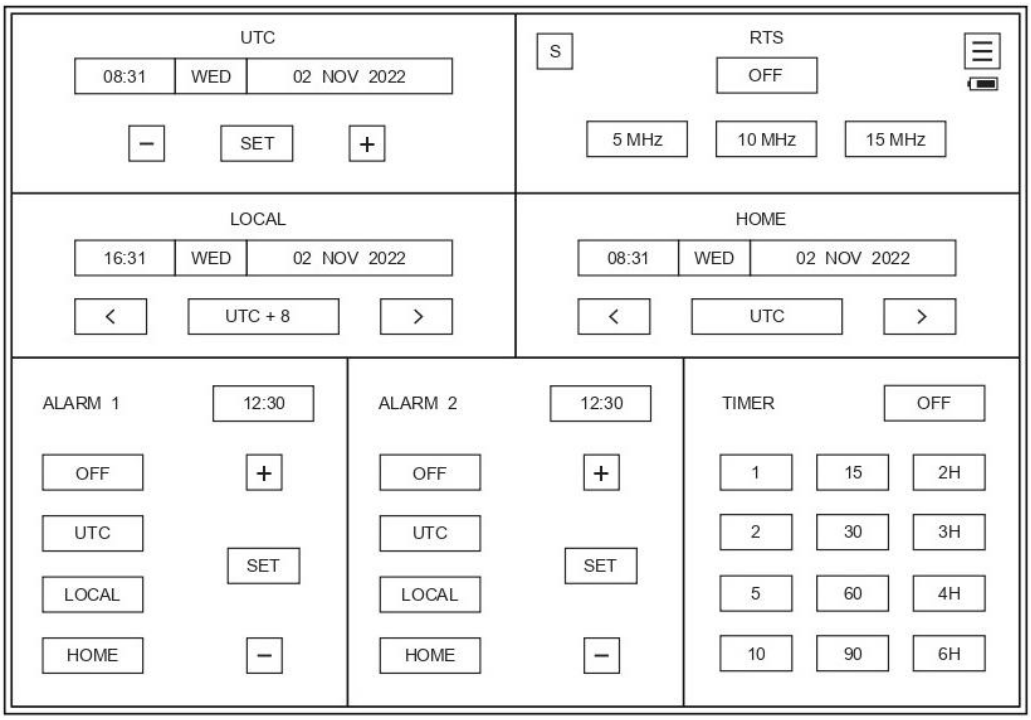
If the device is taken outside of operating limits, an 'OUTSIDE OPERATING LIMITS' message with a blackened background will appear, regardless of whether the device is turned on or off. No measurements will be recorded while this message is displayed, though the device will continue monitoring the atmospheric pressure every 10 minutes. Once the pressure returns to a range within the designated limits again, the barometer function will automatically resume normal operation.

When the charge of the batteries falls below operating limits, the device will show the warning message 'REPLACE BATTERIES'. No atmospheric pressure measurements will be taken while this message is displayed.

Barometer Alarms

Upper and lower threshold alarms for both tendency or pressure can easily be set by touching the graph area at the level you want, independently for upper and lower thresholds. This function will keep you informed about possibly important upcoming changes in weather status. When you set the alarm thresholds, a thick black horizontal line will appear indicating the threshold level you chose. As soon as the pressure and/or tendency reaches their thresholds, an alarm will sound every ten minutes as long as the threshold is reached. No matter which screen you are using, the device will display which alarm is sounding in a rectangular indicator with blackened background appearing next to the ☰ button. An alarm indicator will also show up on the screen even when the device is turned off. To disengage the alarm, just touch the thickened line on the graph. It will disappear.

CLOCK FUNCTION



The Clock Screen allows you to keep track of time in three time zones and set two alarms and one timer.

The UTC Frame is the most important time reference on this device because almost all weather-related radio transmission schedules are based on this time. Any resetting of the time, day of week, date, month, and year in this frame will also automatically reset local and home times on this device.

Setting and resetting is easy. All you do is touch the ‘SET’ button and the device will blacken the background of the time reference to be reset. The sequence is year → month → date → weekday → hour → minute. If there is no change, touch the ‘SET’ button again and the device will skip to the next time reference in the sequence. To accept, all you do is touch the ‘SET’ button.

Note that changing the date will not automatically change the day of week.

Also note that seconds are not shown. To make sure they are precise, set the clock one minute in advance but do not perform the final touch of the ‘SET’ button just yet. Keep watch on a reference clock or listen for the radio time signal (RTS). At the exact moment the minute changes, touch the ‘SET’ button to finalize the clock settings.

VERY IMPORTANT: It does not matter what time reference you are resetting, any time you touch the ‘SET’ button, the clock is stopped and the device loses some time. Therefore, always finish with resetting the minutes and seconds as described. In fact, any time the background in a UTC box in this frame is blackened for resetting, all other time function buttons are locked.

The device does NOT take daylight savings time into account.

The Local Time Frame shows the current time in the time zone you have set. Touch the < button to go down time zones or the > button to go up time zones.

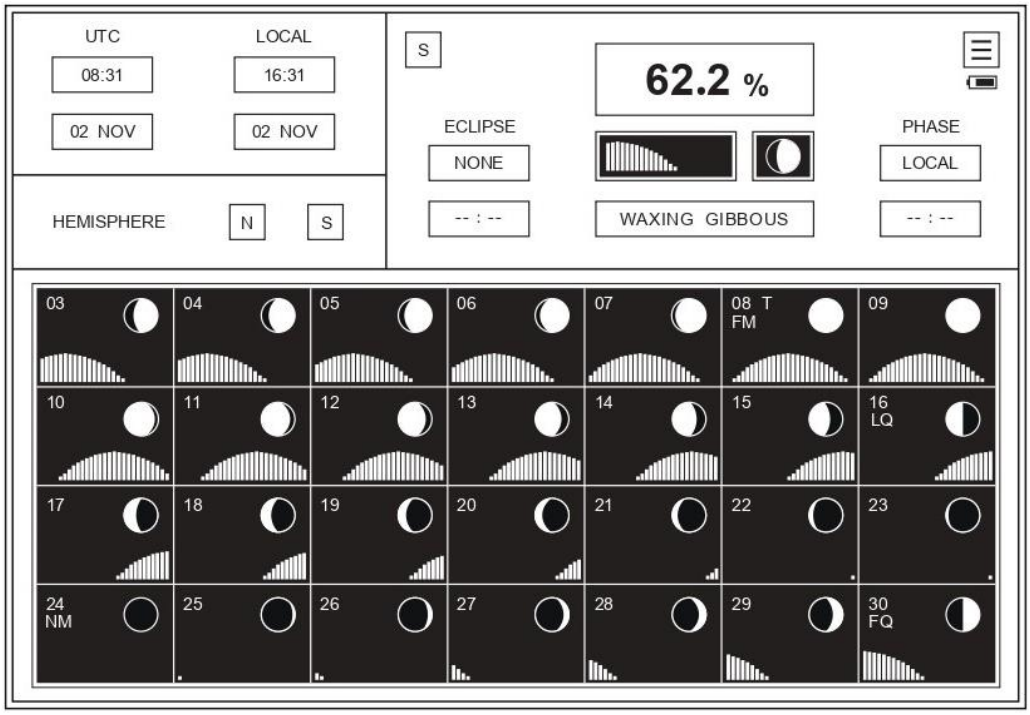
The Home Time Frame is an optional frame. You can set it for any other time zone you want. Most cruisers would want to set it for their home base. Touch < to go down time zones or > to go up time zones.

The Radio Time Signal (RTS) Frame allows you to tune into radio-transmitted time signals. The time signals (beeps or time announcements) are usually transmitted over different frequencies simultaneously. You can choose among 5, 10, and 15 MHz, whichever gives you the best reception. RTS can be used as a time reference for setting the time precisely if you have no other time reference. In fact, this device has a very reliable and precise clock. Once set, it will remain very accurate over time.

The Time Alarm Frames (**1 and 2**) allow you to set two independent alarms which can be set to UTC, LOCAL, or HOME times. You can see whether they are turned on or off in these frames. You can also see the statuses of the alarms on the HOME screen. Note that all alarms, including the barometer and timer, sound the same. These alarms are working and will sound even when the device is turned off. No matter which screen you are using, the device will display which alarm is sounding in a rectangular indicator with blackened background appearing next to the ☰ button. When you change screens, this alarm indicator will disappear, assuming you have noticed the alarm.

The Timer Frame allows you to set the timer to sound at preset times in minutes or hours (H). It will sound repeatedly, e.g., every five minutes until the timer or the device is turned off. Note that this timer will stop tracking time when the device is turned off.

MOON CALENDAR FUNCTION



The Moon Status Screen gives you a very clear and simple visual depiction of the moon phases, moonlight availability at night, and estimated times of that availability as well as moon eclipse information. The Moon Status Screen should be useful for fishing, nighttime navigation, navigation planning, and roughly estimating tides.

The Time Frame shows UTC, local time, date, and month.

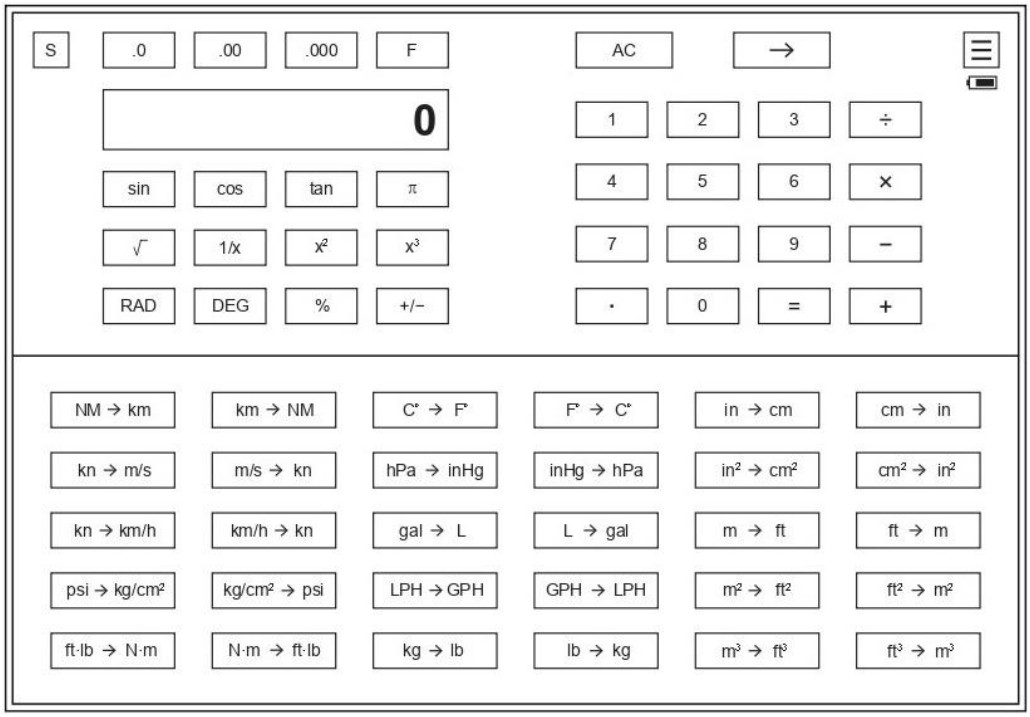
The Hemisphere Frame allows you to choose the hemisphere by touching the ‘N’ or ‘S’ button.

The Moon Status Frame shows the current percentage of the moon illuminated, regardless of whether it is visible in the sky. Below the percentage window, you will see two windows with black backgrounds. The width of the left window represents the general period of darkness, the middle approximately midnight. The vertical illumination bars suggest the relative height of the moon above the horizon over the night, generally the higher the bars, the better the illumination of objects at night. The smaller window on the right depicts the current shape of the moon in your hemisphere, not adjusting for changes associated with latitude.

The eclipse box tells you whether there is no moon eclipse (NONE), a total eclipse (100%), or partial (e.g., 40% or 20%, etc.). The box below it tells you the time the eclipse is peaking or displays the --:-- symbol if there no eclipse. The phase box to the far right tells you the exact time any one of the major phases will reach its peak on the current day. The ‘LOCAL’ word in the box above it reminds you that a local time is being used for all events.

The 28-day Moon Calendar Frame in the lower half of the screen updates once a day at midnight local time. For each date, you will also see the average shape of the moon on that day, an abbreviation for the major lunar phase--new moon (NM), first quarter (FQ), full moon (FM), and last quarter (LQ), if present. Each box will also give an indication of an eclipse if it happens on that day, 'T' if total and 'P' if partial. At the bottom of each box, you will see nighttime illumination bars (explained above).
Please, note that the device is calculating the moon status data, not retrieving it from an external source. These calculations are complex and inevitably involve a slight amount of rounding. However, the results are quite accurate, typically within a minute.

CALCULATOR / UNIT CONVERTER FUNCTION

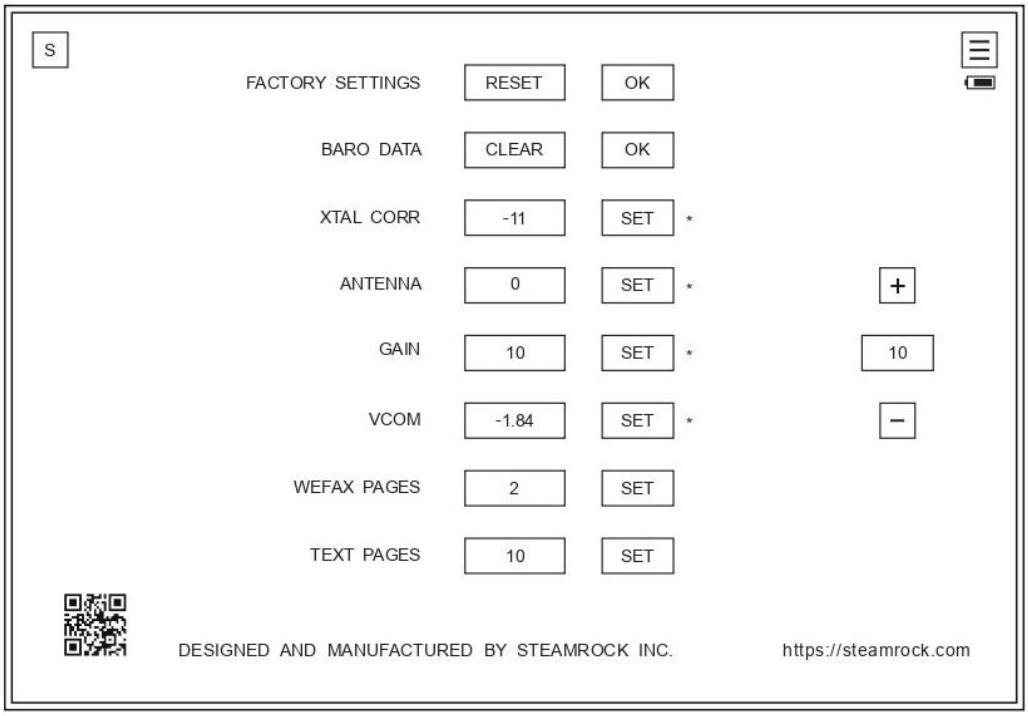


The Math Screen displays the calculator frame and the unit conversion operations frame.

The Calculator Frame shows a typical calculator that works the same way that most calculators do.

The Conversion Operations Frame below presents 30 unit conversion operations useful for mariners. All you do is enter the unit number you want to convert into the calculator, touch the conversion operation you want, and the converted result will show up in the calculator display. Note that this calculator does not have engineering precision, so there will be some slight rounding of some fractional results. However, it is perfectly suitable for most operations needed.

SETTINGS



The Settings Screen displays less frequently used settings that you may want to adjust.

FACTORY SETTINGS is for clearing all stored data and parameters you have set, restoring default settings. To use it, touch the 'RESET' button. The button will be depressed. If you are certain you want to clear the device and restore default settings, touch 'OK' button. If you touch 'RESET' button by accident or you change your mind, just touch 'RESET' again and it will pop back out, canceling the operation.

BARO DATA is for clearing all stored barometer data. To use it, touch the 'CLEAR' button. The button will be depressed. If you are certain you want to clear barometer data, touch 'OK' button. The stored barometer readings will be cleared, but the barometer settings will be retained. If you touch 'CLEAR' button by accident or you change your mind, just touch 'CLEAR' again and it will pop back out, canceling the operation.

XTAL CORR, ANTENNA, GAIN, and **VCOM** are settings used by the manufacturer only, indicated with an '*'. It is best not to adjust these settings. These are NOT default settings and are set for each device individually. Even FACTORY SETTINGS will NOT restore them. If you feel compelled to adjust these numbers, be sure to record them before you do. Otherwise, you stand the chance of losing important settings for your device.

WEFAX PAGES and **TEXT PAGES** allow you to limit the number of pages that the device can receive during a single weather fax or text transmission. To set or change these numbers, touch the 'SET' button. When engaged, you can increase or decrease the number in increments of 1 or 10 by touching the plus or minus button. You can switch between these increments by touching the '10' button. When it is depressed, increments of ten are being used. To accept the adjustments, touch the 'SET' button again.

BATTERIES

Use high quality batteries only. Alkaline batteries are recommended for this device. NiMH rechargeable batteries can be used, but the battery charge state (displayed on the screen) will not be accurate and the operating time will be shorter. Zinc carbon batteries can be used, but they typically have less capacity.

Replace all batteries at the same time. Do not mix old and new batteries and do not mix different types of batteries or batteries produced by different manufacturers, since this may lead to battery leakage, which can damage the device.

When battery charge falls below operating limits, you will see a warning message ‘REPLACE BATTERIES’ on a blank screen. The device will also produce a beep to the tone of the Morse code letter ‘B’ (- ...) once.

When you see the ‘REPLACE BATTERIES’ warning, replace the old batteries as soon as possible. At least, remove them, because leakage of discharged batteries can cause permanent damage to the device.

No matter if the batteries are low or removed, the clock will keep running for several days and the device will keep previous records and settings in its internal memory indefinitely. There may be a sudden discordant ‘step’ on the atmospheric pressure and tendency graphs on the Barometer Screen if you replace the batteries some time after you have noticed the warning message ‘REPLACE BATTERIES’ because changes in atmospheric pressure may have occurred during down time.

Before leaving the device unattended for a prolonged period, check the battery charge. If the battery charge is low, you may want to replace or remove the batteries to keep them from falling below operating limits while unattended and prevent battery leakage. It is advised that you keep a spare set of batteries if you are making very active use of the device.

Battery longevity varies between 2 days and several months, depending on sound volume, device mode, and ambient temperature. Generally, you should be able to have received at least one hundred weather faxes before replacing the batteries.

HANDLING AND MAINTENANCE

- Although the SR-97 is splash proof, do NOT submerge it or spray it directly with pressurized water.
- The device is sturdy and built to withstand the elements. However, to extend its longevity, avoid subjecting it to excessive vibration and shock.
- To reduce wear and tear on the device's antenna connector, it is best to avoid removing the antenna unnecessarily.
- If the folding joint between the antenna and its base becomes tight due to corrosion, do NOT force fold the antenna. Instead, work to resolve the tightness of the joint or replace it. The extra force applied to the antenna may weaken the casing and/or damage internal connections.
- Like many other devices with large displays, care should be taken not to scratch or shatter it.
- Although e-paper displays are perfect for outdoor readability, they should not be exposed to direct sunlight.
- Keep the display clean to avoid touch screen dysfunction. Use only a soft cloth to clean the device to avoid scratching it.
- Please note e-paper displays normally work more slowly at lower temperatures.
- Display ghosting, in which images from a previous screen are subtlety visible (ghosted) behind the newly displayed images, is a normal e-paper characteristic. If you find it excessive, just restart the device. This will clear it.
- In the unlikely event that the device freezes up and turning it off and on does not help, then just open the cover of one of the battery compartments to disconnect the battery source and put it back on to restart the device.
- If for any reason you need to take the device apart, be aware that the two halves of the device casing are connected at the bottom with two short ribbon cables. To avoid damage, fold open the two halves of the device casing carefully starting from the top.

RECEIVING TIPS

Quality of HF reception depends on time of day and year, intensity of solar radiation, sunspot cycle, sudden ionospheric disturbances, magnetic storms and so on. In addition, reception of radio signals can be affected by thunderstorms and sources of noise on the boat including ignition systems, auto pilots, chartplotters with touch screens, and motors. Therefore, to ensure better reception, keep the device away from these sources.

This device has a touch screen which inevitably produces some electromagnetic noise. To minimize its effect on reception, it is best to use the device in open areas, making sure the display does not face nearby surfaces that would bounce back this noise to the device's antenna.

Apart from SSB, you can also receive radio broadcasts from the stations transmitting in AM mode within the 3-30 MHz range using either USB or LSB mode**.**

On this device, you can turn down the volume while you are receiving weather fax or text radio transmissions. This feature reduces noise distraction.

CAUTION

- Maximum supply voltage should not exceed 6.5 volts.
- Do NOT clean this device with chemicals, expose it to direct sunlight, or operate it below 0 °C (32 °F).
- Avoid using this device near lightning. Under these conditions, turn the device off and disconnect the antenna.
- In no case should this device be used as the sole basis for weather prediction or navigation decisions. The user assumes sole responsibility, legal or otherwise, for these decisions.

LIMITED WARRANTY

If within one year from the date of original purchase, this device is found to be defective in material or workmanship, it will be replaced or repaired at the discretion of the manufacturer.

This warranty excludes water or chemical damage, battery leakage, use of wrong types of batteries, installing the batteries in reverse polarity, physical damage, and use of device outside operating limits.

Please refer to 'Limited Warranty' section at steamrock.com for full details.

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2. Telescopic antenna	1
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4. Owner's manual	1

SPECIFICATIONS

Dimensions	270 x 240 x 90 mm (10.5” x 9.5” x 3.5”)
Weight	1.62 kg (3.5 lb) without batteries
Power	4 x D cells (6 V)
Display	9.7” b/w electronic paper (202 x 140 mm)
Receiver:	
Tuning Range	3 MHz to 30 MHz SSB
Tuning Steps	10, 50, 100 Hz, 1, 5, 9, 10 kHz
Barometer:	
Absolute accuracy	1 hPa (0.0295 inHg) at 0 ~ 50 °C (32 ~ 122 °F)
Long term sensor drift	< 1 hPa (0.0295 inHg) / year
10-min timing accuracy	< 1%
Clock accuracy	±2ppm from 0°C to +40°C
Compass safe distance	1 meter
Operating limits:	
Pressure range	500 hPa ~ 1100 hPa (14.765 ~ 32.483 inHg)
Temperature	0 ~ 50 °C (32 ~ 122 °F)

NOTES