Editing Objects Manually

From the main menu, select Browse Objects, browse to an object and press Menu.

Note: Not all options are available on all objects.

Cancel Changes	Cancels changes you have just made.
Save Changes	Saves changes you have just made.
Edit System	Edits system parameters.
Frequency	Edit object frequency.
Alpha Tag	The object name. Press ◀ or ▶ to move the cursor; press ▲or▼to change the value.
Set Scanlists	Changes the objects Scanlists.
DG Mode	Toggles between analog, digital and auto.
RX Mode	Changes object's receive mode: FM, NFM (Narrow FM), Auto, AM
SQ Mode	Changes object's Squelch mode: None, CTCSS, DCS, NAC, SRCH (Search)
SQ Search	Turns Squelch Search on or off
Store SQ Code	Only appears when MENU is pressed while monitoring a conventional channel that is set for CTCSS or DCS search mode. Select Store SQ code to store the value of the found CTCSS or DCS code. Subsequent transmissions must have matching CTCSS or DCS squelch codes to be monitored by the WS1080.
SQ Exclude	Turns Squelch Exclude on or off. Allows certain CTCSS/DCS codes to be excluded.
Locked Out	Locked objects (indicated by an L) are not scanned.
Skipped	Skipped objects are not scanned.
Priority	EZ Scan frequently checks priority channels for activity. Priority status is indicated by an upper case P.
Delay	The scanner waits for a reply for two seconds after a transmission ends before resuming a scan
Attenuate	Applies attenuation to the channel.
AGC	Reduces interference from strong local transmitters. (Only available for conventional frequencies.)

Audio Boost	Increases audio level when channel becomes active.
Alarm	An alarm sounds when activity is found for a frequency or talkgroup. Press ◀ or ▶ to select an alarm sound.
Light	Press ◀ or ▶ to select the desired light options: **Leave** – use default backlight settings **On** – turn the backlight on **Flash** – flash according to the set flash pattern
Flash Pattern	A light pattern used to identify the channel.
On Time/Off Time	The backlight duration for each flash pattern step. (10 millisecond increments. 50 = 500 milliseconds = .5 seconds).
LED Enable	Turns on/off the Alert LED for this object.
LED Flash	Alert LED will flash when enabled.
Color Count	Select 1 to 4 colors to be displayed when Object is Active. Option 0= off
Record	Set Recording when Object is active.
Delete Object	Removes the channel from EZ Scan's working memory. The channel remains in the library data.

Alert LED Settings

Note: The EZ Scan PC application allows you to group objects (such as all Keller Fire Department) and edit the color to red. Even add an alert tone to differentiate Keller Fire from Hurst Fire. The following instructions show you how to edit color of an individual object from the keypad.

The Alert LED has been enhanced. These enhancements provide powerful new capabilities for customizing the Alert LED, giving you even more flexibility to show unique colors and flash patterns when transmissions are received on important talkgroups and channels. The following program charts are examples of how the Alert LED can be configured to produce unique and noticeable effects and colors.

1. Press **MENU**.

2. Select Browse Objects.

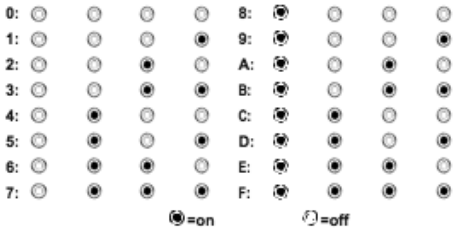
3. Use the ◀ or ▶ to select a Scanlist.

4. Use the ▲or ▼ to select an object within the selected Scanlist.

5. Press **MENU** to enter object options. (options are shown in the following examples) Scroll till "Flash Pattern" is shown and press the ▶.

6. A list of 8 characters are displayed (55555555). Adjust each one to obtain the flash pattern desired. Options are 0-9 and A-F. See Flash pattern chart for how each number/letter will control the Alert LED.

7. Once set press **SEL** to accept the flash rate. Press ◀ to import the items. (This may take several minutes.)



EXAMPLE: Using the above chart with pattern 3B3B3B3B, the LED pattern for "3" is "off/off/on/on" and the LED pattern for "B" is "on/ off/on/on." With this selection the Alert LED will flash back and forth between "off/off/on/on" and "on/off/on/on." The flash pattern goes in order from left to right.

NOTE: Both the flash rate and color options are in hexadecimal format.

On Solid - Single Color

These settings will illuminate the LED with a single color, solid, no flashing when the Object is receiving traffic.

Flash Pattern	n/a
On Time	n/a
Off Time	n/a
LED Enable	Checked
LED Flash	Unchecked
Color Count	1
Color 1	FF0000 (red)
Color 2	n/a
Color 3	n/a
Color 4	n/a

Slow Flash - Single Color

These settings will illuminate the LED with a single color, flashing on and off at the rate of one cycle per second.

Flash Pattern	55555555
On Time	50
Off Time	50
LED Enable	Checked
LED Flash	Checked
Color Count	1
Color 1	FF0000 (red)
Color 2	n/a
Color 3	n/a
Color 4	n/a

Slow Flash - Two Color

The settings shown above will illuminate the LED with a two colors, flashing on and off at the rate of one cycle per second. The LED will be illuminated for 1/2 second and off for 1/2 second each period and will alternate colors each flash.

Flash Pattern	55555555
On Time	50
Off Time	50
LED Enable	Checked
LED Flash	Checked
Color Count	2
Color 1	FF0000 (red)
Color 2	0000FF (blue)
Color 3	n/a
Color 4	n/a

Highway Department 1 - Strobe Effect

These settings produce a rapid yellow pulsing strobe effect.

Flash Pattern	A8A8A8A8
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	1
Color 1	FFFF00 (yellow)
Color 2	n/a
Color 3	n/a
Color 4	n/a

Highway Department 2 - Strobe Effect

These settings produce a rapid yellow and white strobe effect.

Flash Pattern	A8A8A8A8
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	2
Color 1	FFFF00 (yellow)
Color 2	FFFFFF (white)
Color 3	n/a
Color 4	n/a

Police Department 1 - Strobe Effect

These settings produce a rapid blue pulsing strobe effect.

Flash Pattern	A8A8A8A8
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	1
Color 1	0000FF (blue)
Color 2	n/a
Color 3	n/a
Color 4	n/a

Police Department 2 - Strobe Effect

The settings produce a rapid blue continuous strobe effect.

Flash Pattern	AAAAAAAA
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	1
Color 1	0000FF (blue)
Color 2	n/a
Color 3	n/a
Color 4	n/a

Police Department 3 - Strobe Effect

These settings produce an alternating blue/red strobe effect.

Flash Pattern	AAAAAAAA
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	2
Color 1	0000FF (blue)
Color 2	FF0000 (red)
Color 3	n/a
Color 4	n/a

Fire/EMS 1 - Strobe Effect

The settings produce an intense red/white strobe effect.

Flash Pattern	AFAFAFAF
On Time	5
Off Time	1
LED Enable	Checked
LED Flash	Checked
Color Count	2
Color 1	FF0000 (red)
Color 2	FFFFFF (white)
Color 3	n/a
Color 4	n/a

Fire/EMS 2 - Strobe Effect

These settings produce a rapid red/white strobe effect.

Flash Pattern	AAAAAAAA
On Time	5
Off Time	9
LED Enable	Checked
LED Flash	Checked
Color Count	2
Color 1	0000FF (blue)
Color 2	FF0000 (red)
Color 3	n/a
Color 4	n/a

Christmas Tree - Flasher Effect

Just for fun.

Flash Pattern	FFFFFFFF
On Time	50
Off Time	1
LED Enable	Checked
LED Flash	Checked
Color Count	4
Color 1	FF0000 (red)
Color 2	FFFFFF (white)
Color 3	00FF00 (green)
Color 4	FFFFFF (white)

Recording and Playback

Your scanner features a powerful audio recording system that captures transmissions that occur on selected Objects to the Micro SD card using the high quality, industry standard .AU audio file format.

For example, a 2GB Micro SD card with a very large scanning configuration (e.g., 500 MB) still leaves room for over 50 hours of recording time and thousands of recorded transmissions! Here are just a few of the things you can do with the audio recording system:

- Record all transmissions that occur on talkgroups or channels that are of interest to you for later review.
- Perform attended or unattended searches for new frequencies, automatically storing audio with frequency information for all transmissions found while searching.
- Record all transmissions that occur on ALL talkgroups or channels, providing an instant recall function to replay a prior transmission that was missed or unintelligible.

Audio recording is not enabled by default. To enable audio recording, make sure that the Enable Record option in the Settings menu is checked, and set the Record flag in any Objects that you wish to record. You may wish to record audio for all of your programmed Objects, which provides the ability to instantly replay any transmission that the radio receives in cases where the traffic may be difficult to copy.

When recording is enabled radio wide and for selected Objects, you will see the ● icon flash in the display when the audio recorder is actively recording audio information.

When the Micro SD card is almost full, the F icon will appear in the display to indicate that recording is suspended. Delete or archive old audio files to make room for new recordings. To playback recorded audio files:

1. From the Main Menu, select Playback to enter the Playback System.

2. The Playback System will place you at the last audio file that was recorded by the radio. Press the **▶/II/SEL** key to play the file, or use the ▲ and ▼ keys to scroll to another file for playback. ▼ keys to scroll to another file for playback.

3. While playing a file, the ▲ and ▼ keys set the playback volume, and the ◀ or ▶ keys move backward and forward in the file being played in five second increments. The SKIP key ends playback of the current file.

4. After scrolling to a file, you can press the MENU key for a list of playback options.

Main Menu jumps to the Main Menu.

- Back jumps back to the list of recorded files.
- Play From Here plays the current recording and all recordings afterwards.
- Delete All deletes all recorded audio files.
- Delete Earlier deletes recorded audio files prior to the selected audio file.
- Delete Later deletes the selected audio file and all recorded audio files after the selected file.

The EZ Scan Software includes advanced audio file playback and management features in addition to the audio playback and management features in the radio.

Using IF Output

Your scanner can provide its IF/discriminator output signal to the headphone jack. The IF/discriminator output is unsquelched and unfiltered, making it ideal for third party signal analysis and decoding software and hardware.

To activate IF Output mode:

1. Press **MENU**.

2. Scroll to the Program Menu, Press **SEL**, Global Settings, Press **SEL** to continue.

3. Scroll past the Expert section to the IF Out setting.

4. Press the ▶ to scroll through the available options:

Off = disables the IF output function.

HP = routes the IF/discriminator to the headphone jack.

HP/SP = routes the IF/discriminator signal to the headphone jack and the speaker.

Internal Clock/Calendar

Your scanner includes a real time clock/calendar that is used to correctly date and time stamp recorded audio files. The first time you power on your scanner, you will be prompted to set the time and date.

If batteries are allowed to fully discharge, or if they are removed from the scanner for more than a few minutes, the date and time will need to be set again. You can also set the date and time over the USB connection using the EZ Scan Software, or directly on the radio using the Set Clock function in the Main Menu.

Scanning Monitoring and Scanning

When programmed, your scanner provides two basic functions for scanning radio transmissions:

- Monitoring – Listening to a single object.
- Scanning – Checking multiple saved objects, stopping when a transmission is detected.

To scan more quickly, you can skip or lock out frequencies that you do not wish to scan. A skipped frequency is ignored during the current scan; a locked out frequency is ignored for all scans unless it is unlocked.

To monitor a frequency or talkgroup:

1. From the main menu, select Browse Objects, then press ▶.

2. Use the direction keys to browse Scanlists and objects.

3. Press **▶/II/SEL** to monitor the displayed frequency.

4. Press ◀ or ▶ to select another object or press **▶/II/SEL** to begin scanning.

To scan your active Scanlists:

1. Press **MENU**.

2. Select Scan from the main menu and press ▶ or **▶/II/SEL**.

3. To pause the scan, press **▶/II/SEL** when scanner stops on a transmission. To resume scanning, press **▶/II/SEL** again.

To enable or disable Scanlists: (WS1080)

1. Select Scanlists from the main menu, and then press ▶.

2. Press SEL to enable a Scanlist. A checkmark (✓) indicates an active Scanlist. A square (☐) indicates a disabled Scanlist.

3. Press ◀ or MENU to return to Main Menu.

To enable or disable Scanlists: (WS1088)

While scanning, pressing 1 thru 200 will toggle the selected scanlist on or off. Each button must be pressed within 2 second of the last. If more than 1 scanlist will be toggled on or off, press the decimal once as a separator. Pressing the decimal twice will end the sequence.

Example: If you wish to toggle scanlist 9 you press 9 If you wish to toggle scanlist 9, 11, and 22 simply press the following 9 . 11 . 22 or 9 . 11 . 22 . or 9 . 11 . 22..

To lock out objects:

1. From main menu, select Browse Objects, then press ▶.

2. Use the ▲▼ keys to browse objects then press **MENU**.

3. Select Locked Out and press ▶. A checkmark (✓) indicates Lockout is selected. A square (☐) indicates Lockout is disabled. An uppercase L in the display indicates a locked out frequency.

NOTE: The **SKIP** button can be programmed in the Settings Menu (first option under the Expert section) to perform the Lockout function.

To skip transmissions while scanning:

1. Wait for scanner to stop on the transmission and press SKIP. An uppercase S in the display indicates a skipped object.

2. To skip a specific object, you can browse to the object and press **SKIP**.

3. To restore a skipped object, browse to it and press **SKIP**.

4. To restore all skipped objects, in the main menu, select Restore Skipped and press ▶.

NOTE: If the specific object is locked out vs. skipped the SKIP button may have been programmed as Lockout function.

TIP: Consider how you plan to organize your objects for scanning. You can organize your scan lists geographically, assigning objects for your location in one list and objects for other locations in different lists. You can organize your scan lists by trunking system, assigning TGRP objects associated with specific trunked radio systems to separate lists.

To rename a Scanlist:

1. Select Scanlist from the main menu, and then press ▶.

2. Select a Scanlist and press ▶. The Scanlist name appears.

3. Press ◀ or ▶ to move the cursor; press ▲ or ▼ to change the character. Press SKIP to delete a character.

To set priority objects. Priority is used only when you want regular scanner operation interrupted to hear something on your priority object(s):

1. Browse to the object and press Menu.

2. Select Priority and press ▶. A checkmark (✓) indicates an Priority is selected. A square (☐) indicates Priority is disabled.

NOTE: To set priority, Priority Mode must be enabled in the Configuration menu. Setting any object as a priority can cause normal scanner interruption.

Scanlist and Scan Sets

Scan Sets are an exciting new feature with the WS1080 / WS1088. There are 20 Scan Sets that work in conjunction with Scanlists to provide additional scan object selection capability and flexibility. Each Scan Set contains a list of all 200 normal Scanlists plus the special Skywarn® Scanlist.

With Scan Sets you can quickly select large groups of Scanlists to enable or disable, just by enabling or disabling the Scan Sets that contain the desired groups of Scanlists, instead of individually editing the list of enabled Scanlists every time you want to change the group of Scanlists you wish to monitor.

For example:

On Scanlists 01 through 30 you decide to put all of City1. On Scanlists 31 through 50 you decided to put all of City 2, on Scanlists 51 through 62 you decided to put all of City 3. When you move from city to city, it would take some time to individually toggle off the unwanted scanlists and toggle on the new ones. This is where Scan sets come in.

NOTE: When you start a scan, the first thing the scanner does is check to see what Scan set(s) is (are) enabled. It finds Scan set 01 on by default. Next it checks to see what Scanlists are permitted in Scan set 01 and it finds that every scanlist is checked (all are allowed). This means the scanner will use the checked Scanlist boxes to control what Scanlists are scanned. If you have objects stored and the scanner reports, "Nothing to Scan!" Check to see if you accidentally unchecked the box for Scan set 01.

Rename Scan set 01 to City 1 name and uncheck all boxes 31 and up. Leave Skywarn® checked so you can enable Skywarn if you are in City 1. Rename Scan set 02 to City 2 name and check scanlist boxes 31 through 50 and Skywarn, all others should be off. And finally, rename Scan set 03 to City 3 name and check boxes for Scanlists 51 through 62 and Skywarn.

Now when changing from city to city, simply uncheck the Scanset box for the city you are leaving and check the box for the one you are entering.

Searching

You can locate active frequencies quickly and easily using one of the Scanner's three convenient frequency search modes:

• **Spectrum Sweeper** – sweeps rapidly through frequency ranges in 1MHz blocks. Unlike the frequency counter method used in other scanners, Spectrum Sweeper is far more sensitive, arguably just as fast and the only technology that lets you lock out and keep searching in the same band.

• **Service Search** – searches through frequencies used by the following radio services: Public Safety, Aircraft, Railroad, Amateur, CB,Marine, and FRS/ GMRS/MURS. This is a good way to find activity on local frequencies.

• **Limit Search** – searches within a range of frequencies that you define.

To use Spectrum Sweeper:

1. In the main menu, select Search, and press ▶ to enter the search menu.

2. Select Spectrum Sweeper and press ▶.

3. Select All Bands or Public Safety and press right (▶) to start the search. Spectrum Sweeper sweeps through frequency ranges in 1 MHz blocks.

4. Press **MENU** to stop search which enters Sweeper menu where you can select fewer bands to search.

To perform a Service Search:

1. In the main menu, select Search, and press ▶ to enter to the search menu.

2. Select Service Search and press ▶.

3. Scroll through the available services, select a service, and press ▶ to start the search.

4. Press **MENU** to stop search which enters service menu.

To perform a Limit Search:

1. In the main menu, select Search, and press ▶ to enter to the search menu

2. Select **Limit Search**, and press ▶. The search begins immediately.

3. To change the search range, press **MENU**.

4. Scroll to Lo and press ▶.

5. Press ◀ or ▶ to move the cursor; press ▲ or ▼ to change the value.

6. Press **SEL** to save the new value and return to the search menu.

7. Scroll to **Hi** and press ▶.

8. Press ◀ or ▶ to move the cursor; press ▲ or ▼ to change the value.

9. Press **SEL** to save the new value and return to the search menu.

10. Press ◀ to continue the search.

11. Press **MENU** to stop search when enters Limit Menu

To save found frequencies:

1. Press **MENU**.

2. Then select Store Channel and press **SEL**. EZ Scan adds the frequency to the default Scanlist and names it based on the search type.

Search Settings

To change search settings, press MENU while the search is active.

Spectrum Sweeper Settings

- Atten – Attenuation. On or Off.
- Zeromatic – On or off.
- Delay –How long scanner waits after a transmission before resuming.
- Special Mode – Skips 1MHz block where you have skipped five or more frequencies. Special Mode is useful when you are close to many high-power transmitters that are close together in frequency.
- Frequency Ranges – Defines a frequency range to focus a search.

Service Search Settings

- Atten – Attenuation. On or Off.
- Zeromatic – On or off.
- Delay –How long scanner waits after a transmission before resuming.
- Frequency Ranges – Defines a frequency range to focus a search.
- Rx Mode – Set the RX modulation mode to automatic, or forces AM mode or FM mode. RX Mode functions in Aircraft and Amateur bands, Press ◀ or ▶ to change.

Limit Search Settings

- Atten – Attenuation. On or Off.
- Zeromatic – On or off.
- Delay –How long scanner waits after a transmission before resuming.
- Lo – Lowest frequency in the search range.
- Hi – Highest frequency in the search range.

Saving Found CTCSS, DCS or NAC CODES

When importing objects from the Library, squelch codes are automatically imported. If this information is missing, your scanner can quickly identify these codes during a search, if present. When a channel includes a CTCSS, DCS or NAC code, the code appears on the bottom line of the display, followed by an "⚡", which indicates a valid CTCSS, DCS or NAC code:

CTCSS 127.3 ⚡

To save the found code with the channel:

1. When a CTCSS or DCS code is found by the search feature, press **MENU**. Store SQ code appears.

2. Press **SEL**.

After the code is saved, the scanner will only stop on transmissions that have a matching CTCSS, DCS or NAC squelch code present.

NOTE: In the Settings Menu, Simple Display must be unchecked to display and save found CTCSS, DCS or NAC codes.

Weather Monitoring

A weather alert tone includes a digitally-encoded SAME (Specific Area Message Encoding) signal, FIPS (Federal Information Processing Standard) code, and an event code.

Before you can use SAME Stand by Mode, you must program at least one FIPS code. Unless you are near a county boarder, enter only the FIPS code for your county. This prevents alerting when events happen in nearby counties.

To receive severe weather broadcasts while scanning other channels, set your local NOAA channel as the Weather Priority channel, but be aware that normal scanner audio will be regularly interrupted when the scanner jumps away to check for a weather alert.

To program FIPS Codes:

1. Look up your local FIPS code(s) (located at:

www.NWS.NOAA.gov/NWR/indexnw.htm).

2. Press ⓦ to activate Weather Mode, then press **MENU**.

3. Scroll to **SAME1** Tag and press ▶ to name the channel. Press ◀ or ▶ to move the cursor; press ▲ or ▼ to change the character.

4. Scroll down to **SAME 1 FIPS** and press ▶ to enter a FIPS code. Press ◀ or ▶ to move the cursor; press ▲ or ▼ to change the character.

5. Scroll down to **SAME1 Enable** and press **SEL**

or ▶.

6. To program more **FIPS** codes (up to 10), repeat steps

3-5.

7. When finished, select Save Changes and press

SEL or ▶.

NOTE: Programming only one FIPS code will result in alerts intended only for your county. For fringe areas, it may be beneficial to program a second FIPS code for nearby counties.

Entering SAME Location and Event Codes

The following steps are used to create a SAME entry that provides all weather alerts for a given location.

Press the WX key twice to enter Weather mode.

Use the ▲ or ▼ keys on the 4-way push button pad to scroll to the desired SAME code entry.

Press the **SEL** key to edit the selected SAME entry.

With the Entry field selected, press ▶on the 4-way push button pad to turn the entry on.

Scroll to the Code: field and press ▶on the 4-way push button pad to enter a SAME location code. Use the keypad to enter a SAME code.

Scroll to the Event field. Note the current default of ***, which will allow all messages for the specified SAME location code. We recommend that you leave the event code with "***" to receive all alerts.

Scroll to the Tag: field. We suggest that you enter a tag name here that corresponds with the SAME location code that you have entered. Press ▶on the 4-way push button pad to edit the tag name. Use the ◀▶▲▼ keys on the 4-way push button pad or the standard text entry method to enter your tag. Using our Dallas County example, you would enter the following:

31 D

21 A

53 L

53 L

21 A

74 S

.<space>

23 C

63 O

82 U

62 N

81 T

93 Y

Scroll to the Alarm: field. Note that you can specify different alarm sounds for this SAME entry. We recommend that you use the default setting here for general purpose weather alerting.

Scroll to the Lockout: field. Note that Lockout is currently set to off. Lockout is a special purpose parameter that can be used to lock out individual event or area codes. We recommend that you leave Lockout set to off for general purpose weather alerting.

When you have finished editing your SAME entry, press the **SEL** key to store the data, then press the **SEL** key to save all SAME changes and return to the Weather mode.

Activating SAME Stand by Mode

After you have entered your desired SAME codes, you can activate the SAME Standby Mode to begin standby operation. The radio will remain silent until a SAME transmission is received with a code that matches one that you have stored. When a matching SAME message is received, your radio will sound a siren alarm (adjust volume in Settings), then will play the audio message that follows the Warning Alert Tone (WAT).

To activate SAME standby mode, press the WX key, use the ▲ or ▼ keys to find the best weather radio transmitter for your location, then press the SKIP key. This will change to STBY to indicate that SAME Standby Mode is active, and the scanner will alert when a matching SAME message is received.

Press the **SEL** key again to exit SAME Standby Mode, or press **MENU**.

When your local NWS office activates a SAME warning that matches a FIPS code stored in your scanner, you will first hear a siren alarm and see the LED flash to alert you to the incoming alarm. The LED flashes RED for warnings, YELLOW for watches, and BLUE for tests and administrative messages.

The scanner sounds the siren until the NWS transmission of the 1050 Hz Warning Alert Tone (WAT) begins. Once the WAT begins, the scanner's speaker will unmute, and you will hear the WAT play as an alert that the voice portion of the SAME warning is about to begin. You will then hear the voice portion of the SAME warning.

Your scanner will resume SAME Standby operation 90 seconds after the SAME warning starts. You may reset stand by mode by pressing the STBY soft key twice at any time.

To activate SAME Stand by Mode:

1. Press ⓘ and then press ◀ or ▶ to select a NOAA channel.

2. Press **SKIP** to enter Stand by Mode. The speaker silences and **SKIP = Normal** appears at the bottom of the screen.

3. To return to Normal Weather Mode, press SKIP again.

To activate Weather Priority:

1. Press to begin scanning for weather frequencies. When scanner stops on the strongest NOAA channel, press **MENU**.

2. Select Priority and press ◀ or ▶ to select the channel. Be aware that normal scanner audio will be regularly interrupted when the scanner jumps away to check for a weather alert.

3. Scroll to Save Changes and press **▶/II/SEL** or ▶ to save.

Skywarn®

During severe weather Skywarn® repeaters relay severe weather reports from Amateur Radio operators in the field to local National Weather Service offices. When there is no severe weather these repeaters are used for routine communications by licensed Amateur Radio operators. Monitoring Skywarn®, you will hear actual reports as they are called in. You will hear locations near you and you will hear those reports minutes before they are relayed on NWS Weather broadcasts and much sooner than on radio or TV.

To import Skywarn® Frequencies:

1. Browse for Skywarn® frequencies in the EZ Scan library and import them to the Skywarn® Scanlist. If not found in the library, check with a local Amateur Radio club. Find a local one at **www.arrl.org**.

2. Enable the Skywarn® Scanlist.

To activate Skywarn®:

1. Press ⓦ once to enter Weather Mode.

2. Press ⓦ again to activate Skywarn®.

NOTE: Skywarn® temporarily disables all other Scanlists. Remember, local EOC offices (county sheriff or local police) are an important part of Skywarn®. Feel free to add EOC talkgroups to your Skywarn® scanlist.

Configuring

Using V-Scanner Storage

V-Scanner II Storage System -Scanner II (VS-II) system provides you with a way to store multiple configurations on your scanner. VS-II configurations are created, managed and copied to the SD Card using the EZ Scan software.

You can load stored VS-II configurations by selecting the V-Scanner option from the Main Menu, then scrolling to the desired VS-II configuration using the ◀ or ▶ keys. Press the **SEL** key to activate the selected VS-II configuration. Any changes that you have made to the current VS-II or default configuration will be automatically saved to the SD Card before the selected VS-II configuration is loaded.

All V-Scanner folder creation and management is performed using the EZ Scan software. Data in your VS-II folders is updated automatically in the field as you use them. Unlike previous versions of the V-Scanner feature, it is not necessary to "save" and "load" the VS-II folders you are working with - just select the desired VS-II folder and the radio handles the rest automatically.

NOTE: It is not possible to create or delete VS-II folders while in the field. All VS-II folder management is accomplished using the EZ Scan software.

Configuration Settings

To access configuration settings, select Program Menu then Global Settings from the main menu, and press ▶.

- Cancel Changes – Cancels changes you have just made.
- Save Changes – Saves changes you have just made.
- Default Vals – Restores default settings.
- Simple Display – Limits displayed information.
- Default SL – Sets the default Scanlist.
- Priority Mode – Enables Priority mode.
- Priority Time – Time between priority scans.
- Enable Record – Turns on the record feature.
- Search Record – when active unit records transmissions found while searching.
- G Atten Mode – Enables Global Attenuation.
- G Atten On – Activates Global Attenuation.

- Search Dg AGC – Applies Digital AGC to found digital transmissions.
- G AGC Mode – Enables Global AGC.
- G AGC On – Activates Global AGC.
- Scan Sets Opt - Turns on Scan Set Feature.
- Sounds – Sets EZ Scan beeps and alert sounds.
- Alerts –Controls audio alerts.
- Key Beeps – Enables or disables key tones.
- Beep Volume – Sets key tone volume.
- Alert Volume –Object volume.
- Contrast – Sets the LCD contrast.
- LModeBAT – Backlight mode during battery operation.
- LModeEXT – Backlight mode (external power).
- Lite Area – Sets LCD and keypad lighting.
- Lite Time – Backlight duration.
- Lite Level –Controls backlight brightness.
- Welcome Text 1-5 – Sets the text displayed on five lines of the display when the scanner is first turned on.

▼▼▼ Expert ▼▼▼

- Skip - Programmed to "lockout" will permanently locks out an object when the SKIP button is pressed.
- Blink Time 1-2 – Controls the amount of time each item is displayed.
- Show Radio ID – Displays the Radio ID for trunked systems, if available. Tag Only.
- Use RID Alert –Controls alert for Radio ID transmissions.
- Show VC/CC – Displays voice and control channel. Simple Display must be unchecked. Show Radio ID will override if available.
- Show TGID – Displays talkgroup ID. Simple Display must be unchecked.
- Show Site Name – Displays trunking site name, only if two or more trunking system sites are programmed. Simple Display must be unchecked.
- CONV TGID – Displays the talkgroup ID for P25 conventional talkgroup calls. Simple Display must be unchecked.

- CONV Radio ID – Displays the Radio ID for P25 conventional calls. Simple Display must be unchecked.
- PC/IF CCDump – Streams ASCII Control Channel Dump data over the USB interface for trunking control channels.

To file – Stores ASCII Control Channel Dump data to the SD card.

Limit 100

Trim Logs

- Low Batt Time – Interval (seconds) between low battery alert sounds.
- Charge Time – Sets the radio charge time.
- TG Disp – Display format for talkgroup IDs.
- M36 Stat Bits – Uses status bits to track Motorola 3600 baud trunking talkgroup calls.
- M36 ENC
- EDACS Dig
- BandPlan – Selects USA or Canada.
- FlexStep - Permits using Split channel frequency.
- EncMode – For encrypted voice calls: Noise, Silent, or Tone.
- EncLevel – Sets the encrypted call tone level.
- IF Out –Routes the IF Discriminator signal to the headphone jack.
- DSP Level Adapt –Controls how fast the DSP adjusts to varying P25 levels (default: 64). Higher values = faster rates.
- ADC Gain – Controls input signal to CODEC (default: +0dB).
- DAC Gain – Sets output signal from CODEC, varying the audio level of decoded digital signals (default: +0dB).
- Auto Power On

At 00:00

Mode:

- Location Select

Using EZ Scan Software to Update the Scanner

1. Turn off the Scanner.

2. Connect the scanner to your computer using the USB cable supplied. The computer should recognize the scanner's Micro SD card as a new drive. If an auto run screen appears, close it.

3. Select **Check for CPU Firmware Update** in the update menu.

4. Click **Check for Updates** on the update screen.

5. If there are available updates, click Update **My Scanner**.

6. Please be patient, this can take several minutes. When complete, click **Done**.

DSP Firmware Updates

1. Turn off the Scanner.

2. Connect the scanner to your computer using the USB cable supplied. The computer should recognize the scanner's Micro SD card as a new drive. If an auto run screen appears, close it.

3. Select **Check for DSP Firmware Update** in the update menu.

4. Click **Check for Updates**.

5. If there are available updates, click **Update My Scanner**.

6. Please be patient, this can take several minutes. When complete, click **Done**.

Updating the Library (PC)

To update the PC library:

1. Onthe Library Import Tab, click the Update Channels

button. A second Import screen appears.

2. Click the Update Channels button. The library will be updated to the latest version.

NOTE: The procedure to update the RadioReference library requires an internet connection.

Maintenance

Keep the scanner dry; if it gets wet, wipe it dry immediately. Use and store the scanner only in normal temperature environments. Handle the scanner carefully; do not drop it. Keep the scanner away from dust and dirt, andwipe it witha damp cloth occasionally to keep it looking new.

Modifying or tampering with the scanner's internal components can cause amalfunction andmight invalidate its warranty and void your FCC authorization to operate it.

Birdie Frequencies

Birdies are operating frequencies, which all scanners have, that are created inside the scanner's receiver and can cause interference. If the interference is not severe, you adjusting the squelch might omit the birdie, but if you program one of these frequencies after a search, you will hear only noise on that frequency. If you suspect that a frequency you have programmed is being affected by a birdie, try removing the antenna.

Removing the antenna will help determine if the interfering signal is a birdie signal being generated inside of the scanner, or the result of an external interference source. If the noise on a frequency is not affected when the antenna is removed, it is almost certainly the result of a birdie. If the noise disappears when the antenna is removed, the noise is most likely coming from an external source. Moving the scanner may reduce or solve the issue.

Troubleshooting/Error Messages

For detailed troubleshooting/error messages, please visit the FAQ section of our website at www.whistlergroup.com or call toll free 866-923-8719.

Should you experience difficulty, please refer to the following troubleshooting guide for assistance.

Poor or no reception

- Weak signals from distant stations. Reposition for best reception. 2-Way radio reception is line-of-sight. Consider an outdoor antenna; the first 30 feet of elevation makes the most difference.
- Attenuator in use on weak signals. Check performance with and without attenuator activated, use setting with best reception.
- Strong signal overload from nearby transmitter. Check performance with and without attenuator activated, use setting with best reception.
- Loose or defective antenna. Inspect antenna and connectors and correct any problems found.
- Incorrect modulation mode selected. Ensure that proper modulation mode is selected for the type of system being monitored. If necessary, use the PC Application to change modulation mode.

"Scanning not available" shown in display

- The batteries are low and all functions that write data to the MicroSD Card (including scanning) are disabled to prevent data corruption. Recharge or replace the batteries.

The scanner is on but does not scan

- The squelch may not be adjusted correctly. Turn the squelch control counterclockwise.

The scanner does not recognize the MicroSD Card

- The Micro SD Card is not properly formatted. Use the PC Application to reformat the card. If using Windows to format the card, the card format must be FAT or FAT32 with 32kB clusters. Check all three boxes.
- The MicroSD Card may not be inserted fully. Press the MicroSD Card into the slot until a click is heard and the card is fully inserted in the slot.
- The MicroSD Card may be defective. Replace with a new MicroSD Card.

"Init SD Card" appears when the scanner is turned on

- The MicroSD Card is not properly formatted. Use the PC Application to reformat the card.
- The MicroSD Card may not be inserted fully. Press the MicroSD Card into the slot until a click is heard and the card is fully inserted in the slot.

The scanner does not function

- Ensure that the scanner is equipped with fresh batteries. If powering the scanner from external power, make certain that the USB power plug is fully inserted into the scanners USB jack.

Low battery warning beeps and message on LCD display

- Recharge rechargeable batteries or replace alkaline batteries. Ensure that the battery type selection switch in the battery compartment is set to the correct battery type.
- Please consider using an external charger whenever possible to keep batteries maintained.

MicroSD Card error messages

The scanners MicroSD Card must be formatted correctly for proper operation. If the MicroSD Card is corrupted, defective, improperly formatted or missing or if essential files or directories are not present on the card, the scanner displays an error message. If you experience an error message while using your scanner in the field, take a moment to ensure that the MicroSD card is fully inserted in the slot. If this does not correct the problem, refer to the following table for the meanings of the various error codes and steps you can take to correct the problem:

Code	Meaning	Corrective Action
01-00	General heap error	Contact Support and provide error code information
01-01	Unable to allocate from heap	Contact Support and provide error code information
02-00	Unknown object type in data	Use PC Application to delete any corrupted objects or create a new configuration
02-01	Unknown TSYS type in data	Use PC Application to delete any corrupted TSYS objects or create a new configuration
03-00	No MicroSD Card inserted	Ensure that a properly formatted MicroSD card is fully inserted and locked in the MicroSD slot.
03-01	General error initializing file system	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.

03-02	Cluster size bad	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
03-03	Error reading MicroSD card	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
03-04	Error writing MicroSD card	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
03-05	MicroSD Card is full	Reduce size of configuration, remove unnecessary audio recordings or switch to a MicroSD card with more capacity.
03-06	MicroSD Card is write protected	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
03-07	Mass storage mode is active	Under normal conditions this error should not appear. Mass storage device mode is disabled when the scanner is connected to a computer and scanning. Disconnect the radio from the computer, wait a few seconds, then reconnect. Contact Support if the problem persists.
03-08	Unknown MicroSD card read/write error	Reinsert the MicroSD card to ensure it is fully inserted in locked in the MicroSD slot. If necessary, reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
04-00	Initialization error	Contact Support and provide error code information
04-01	Initialization error	Contact Support and provide error code information
04-02	Firmware load error	Contact Support and provide error code information
05-00	Unable to load CONFIG__.BIN	Reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
05-01	CONFIG__.BIN file error	Reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
05-02	CONFIG__.BIN file error	Reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.
05-03	CONFIG__.BIN file error	Reformat the MicroSD card using the PC Application "Prepare SD Card for use" option. Replace the MicroSD card if the problem persists.

Library Copyright Notice

The data contained in EZ Scan's library is provided by special arrangement with Radio Reference and is Copyright ©2014 RadioReference.com, LLC who retains sole ownership of the database. We ask that you respect this copyright by adhering to the following guidelines:

The library data is intended for your personal use only in conjunction with programming and using your EZ Scan. As such,RadioReference.com LLC grants the customer a non-exclusive single license to only be used with the EZ Scan radio and its associated PC software. The library shall not be copied or transferred to any third party in any electronic or physical form or posted on any website.

To decompile the Radio Reference database or convert it for use with another scanning receiver is expressly prohibited.

The Radio Reference database is developed and maintained by unpaid volunteers who are dedicated scanning hobbyists. The Library data is subject to errors in the user-submitted data reported to Radio Reference, and also to the system configuration changes that a radio system operator may make from time to time. Field-testing the library data for accuracy is not feasible.

For detailed radio system information worldwide, be sure to visit www.radioreference.com frequently. We encourage you to get involved with Radio Reference, and submit your own new or updated data to the database, which will result in future updated editions of the library.

Radio Reference is not responsible for errors, missions or outdated library data.

Specifications

Receiving modes.....AM, FM, FM-MOT (Motorola), LTR (EF Johnson), CTCSS, DCS, NAC on P25, EDACS wide/narrow (GE/Ericsson/HARRIS), P25-Phase I, X2-TDMA, P25-Phase II
Receiving system.....Triple conversion PLL super heterodyne
WX frequencies.....162.400, 162.425, 162.450, 162.475, 162.500, 162.525, 162.550 MHz
Display.....Full dot matrix bitmap LCD (132x65 dots)
Sensitivity.....(fm 12 dB SINAD quieting unless otherwise noted)
VHF Low.....0.2 µV
VHF Aircraft (20 dBq AM).....0.4 µV
VHF High 137-174 MHz.....0.3 µV
VHF High 216-300 MHz.....0.4 µV
UHF Low 300 - 406MHz.....0.8 µV
UHF/UHF-T 406 - 512 MHz.....0.4 µV
UHF High 764 - 960 MHz.....0.5 µV
1240 - 1300 MHz0.5 µV
Squelch sensitivity (band center)
Threshold.....AM/FM 0.5 µV
Tight.....(S+N)/N: AM 20 dB, FM 25 dB
Spurious rejection.....VHF High at 154.1 MHz: 40 dB (Except Primary image)
Signal to noise ratio.....35-40 dB typical (100 µV input signal)
Scanning rate without trunking.....138–47.9 MHz:70ch/second (in 100 kHz Intervals)
Search rate.....162.25 – 167.25 MHz: 80 steps/sec.
Scan and Search delay time.....2 seconds
Audio max. power RF input :100 µV at 154.1 MHz (DEV:3kHz at 1kHz)
8 Ohms Resistor Load at speaker terminal (BTL): 500 m Watts
Intermediate frequency
1st.....380.8 MHz
2nd.....21.4 MHz
3rd.....455 kHz
Current drain.....8 Ohm internal speaker at 154.1 MHz, 5V Ext Power, Squelched: 170 mA (Back light off/without charging)
Antenna impedance.....50 Ohms
Temperature range (optimal).....–10°C to 60°C
Speaker.....Built-in 36 mm 8 Ohms dynamic speaker
Operating voltage..... DC 4.8 Volts (4 AA Ni-MH batteries)
.....DC 6 Volts (4 AA alkaline batteries)
External power and charge voltage...USB Power (DC 5V 500mA)
Dimensions (HWD).....5.31 x 2.12 x 1.06 inch (135 x 67 x 28 mm)
Weight.....7.4 oz. (210g)
Without antenna and batteries

Frequency Coverage

25.000-26.960 MHz.....(in 10 kHz steps/AM)
26.965-27.405 MHz.....(in 10 kHz steps/AM)
27.410-29.505 MHz.....(in 5 kHz steps/AM)
29.510-29.700 MHz.....(in 5 kHz steps/FM)
29.710-49.830 MHz.....(in 10 kHz steps/FM)
49.835-54.000 MHz.....(in 5 kHz steps/FM)
108.000-136.9916 MHz.....(in 8.33 kHz steps/AM)
137.000-137.995 MHz.....(in 5 kHz steps/FM)
138.000-143.9875 MHz.....(in 12.5 kHz steps/AM)
144.000-147.995 MHz.....(in 5 kHz steps/FM)
148.000-150.7875 MHz.....(in 12.5 kHz steps/FM)
150.800-150.845 MHz.....(in 5 kHz steps/FM)
150.8525-154.4975 MHz.....(in 7.5 kHz steps/FM)
154.515-154.640 MHz.....(in 5 kHz steps/FM)
154.650-156.0450 MHz.....(in 7.5 kHz steps/FM)
156.0500 MHz.....(FM)
156.0525-156.1725 MHz.....(in 7.5 kHz steps/FM)
156.1750 MHz.....(FM)
156.1800-156.2475 MHz.....(in 7.5 kHz steps/FM)
156.2500-156.2550 MHz.....(in 5 kHz steps/FM)
156.275-157.450 MHz.....(in 25 kHz steps/FM)
157.470-160.8225 MHz.....(in 7.5 kHz steps/FM)
160.8250 MHz.....(FM)
160.830-161.5725 MHz.....(in 7.5 kHz steps/FM)
161.600-161.975 MHz.....(in 5 kHz steps/FM)
162.000-174.000 MHz.....(in 12.5 kHz steps/FM)
216.0025-219.9975 MHz.....(in 5 kHz steps/FM)
220.000-224.995 MHz.....(in 5 kHz steps/FM)
225.000-379.99375 MHz.....(in 6.25 kHz steps/AM)
380.000-419.9875 MHz.....(in 12.5 kHz steps/FM)
420.000-450.000 MHz.....(in 5 kHz steps/FM)
450.00625-512.000 MHz.....(in 6.25 kHz steps/FM)
764.000-781.996875 MHz.....(in 3.125 kHz steps/FM)
791.000-796.996875 MHz.....(in 3.125 kHz steps/FM)
806.000-823.9875 MHz.....(in 12.5 kHz steps/FM)
849.000-868.9875 MHz.....(in 12.5 kHz steps/FM)
894.000-939.9875 MHz.....(in 12.5 kHz steps/FM)
940.000-960.000 MHz.....(in 6.25 kHz steps/FM)
1240.000-1300.000 MHz.....(in 6.25 kHz steps/FM)
137.000-174.000 MHz.....(in 5 kHz steps/FM) Canada
380.000-512.000 MHz.....(in 12 kHz steps/FM) Canada

*Excludes frequencies utilized by the Cellular Mobile Radiotelephone Service: 824-848.9875 MHz and 869-893.9875 MHz

Consumer Warranty

This Whistler product is warranted to the original purchaser for a period of one (1) year from the date of original purchase against all defects in materials and workmanship, when purchased from an authorized Whistler retailer. This limited warranty is void if the unit is abused, misused, modified, installed improperly, or if the housing and/or serial numbers have been removed. There are no express warranties covering this product other than those set forth in this warranty. All express or implied warranties for this product are limited to one (1) year. Whistler is not liable for damages arising from the use, misuse, or operation of this product including but not limited to loss of time, inconvenience, loss of use of your product or property damage caused by your product or its failure to work, or any other incidental or consequential damages including personal injury.

DO NOT RETURN ITEM TO STORE WHERE PURCHASED.

FOR WARRANTY INFORMATION, CONTACT WHISTLER CUSTOMER SERVICE AT 1-866-923-8719.

Representatives are available to answer your questions

Monday – Friday

from 8:00 a.m. to 5:00 p.m. CT

Service Under Warranty

During the warranty period, defective units will be repaired or replaced (with the same or a comparable model), at Whistler's option, without charge to the purchaser when returned prepaid, with dated proof of purchase to the address below. Units returned without dated proof of purchase will be considered out of warranty and therefore are not covered by the described Limited Warranty. (Refer to Service Out of Warranty section.)

Due to the specialized equipment necessary for testing Whistler products, there are no authorized service centers other than Whistler. When returning a unit for service under warranty, please follow these instructions:

1. Ship the unit in the original carton or in a suitable sturdy equivalent, fully insured, with return receipt requested to:

Whistler Repair Dept.

1412 South 1st St. Rogers, AR. 72756

Please allow 3 weeks turnaround time.

IMPORTANT: Whistler will not assume responsibility for loss or damage incurred in shipping. Therefore, please ship your unit insured with return receipt requested. CODs will not be accepted!

2. Include with your unit the following information, clearly printed:

- Your name and physical street address for shipping (no PO Boxes), a daytime telephone number, and an email address (if applicable).
- A detailed description of the problem (e.g.,"device will not Power ON").
- A copy of your dated proof of purchase or bill of sale.

3. Be certain your unit is returned with its serial number. Units without serial numbers are not covered under warranty.

IMPORTANT: To validate that your unit is within the warranty period, make sure you keep a copy of your dated proof of purchase. For warranty verification purposes, a copy of your dated store receipt must accompany any Whistler product sent in for warranty work.

Service Out of Warranty

Units will be repaired at "out of warranty" service rates when:

- The unit's original warranty has expired.
- A dated proof of purchase is not supplied.
- The unit has been returned without its serial number.
- The unit has been misused, abused, modified, installed improperly, or had its housing removed.

The minimum out of warranty service fee for your Whistler Scanner is $120.00 (U.S.). If you require out of warranty service, please return your unit as outlined in the section "Service Under Warranty" along with a cashier's check or money order in the amount of $120.00. Payment may also be made by MasterCard, VISA or American Express. **Personal checks are not accepted.**

In the event repairs cannot be covered by the minimum service fee, you will be contacted by a Whistler technical service specialist who will outline options available to you.

IMPORTANT: When returning your unit for service, be certain to include a daytime telephone number and an email address (if applicable).

Customer Service

If you have questions concerning the operation of your Whistler product, or require service during or after the warranty period, please call Customer Service at

1-866-923-8719.

Representatives are available to answer your questions Monday - Friday from 8:00 a.m. to 5:00 p.m. (CT) or visit the FAQ at

www.whistlergroup.com.

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For US Patent info visit: www.whistlergroup.com/pat

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