White's Spectra® V3ⁱ

Owner's Guide

Now with ON-BOARD Quick Reference Manual

White's Electronics, Inc.
The World's Finest Metal Detectors -
manufactured in Sweet Home, Oregon USA

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(see back cover)

A word from the President ...

Congratulations and thank you for choosing White's Spectra V3i.

Spectra is the result of years of research and development, time proven manufacturing and testing techniques, and most of all ... listening to our customers.

The Spectra represents many firsts for metal detector technology. More capabilities than any metal detector ever. Spectra has Preset Programs developed by our experts, already set up and ready to find what others have left behind.

This instruction manual will give you a good understanding of the basics. There are no substitutes for field experience. Practice using the Spectra, and then study this manual further. Before long, you may well be teaching the experts a thing or two.

I am proud of the Spectra, and the people here at White's who designed and built it for you.

We've been designing, building, and distributing world wide for nearly 60 years from our factory in Sweet Home, Oregon, USA. We put our "Made In America" label on every metal detector we build!

Happy Hunting!

President
White's Electronics, Inc.

" I am proud to say
all White's Metal Detectors are
built in Sweet Home, Oregon USA"

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Table of Contents

There is much confusion - some of it deliberate - over how many frequencies a detector actually uses, and whether multiple frequencies are truly better than a single frequency. What defines a multi-frequency detector? What do multiple frequencies really do for depth and discrimination?
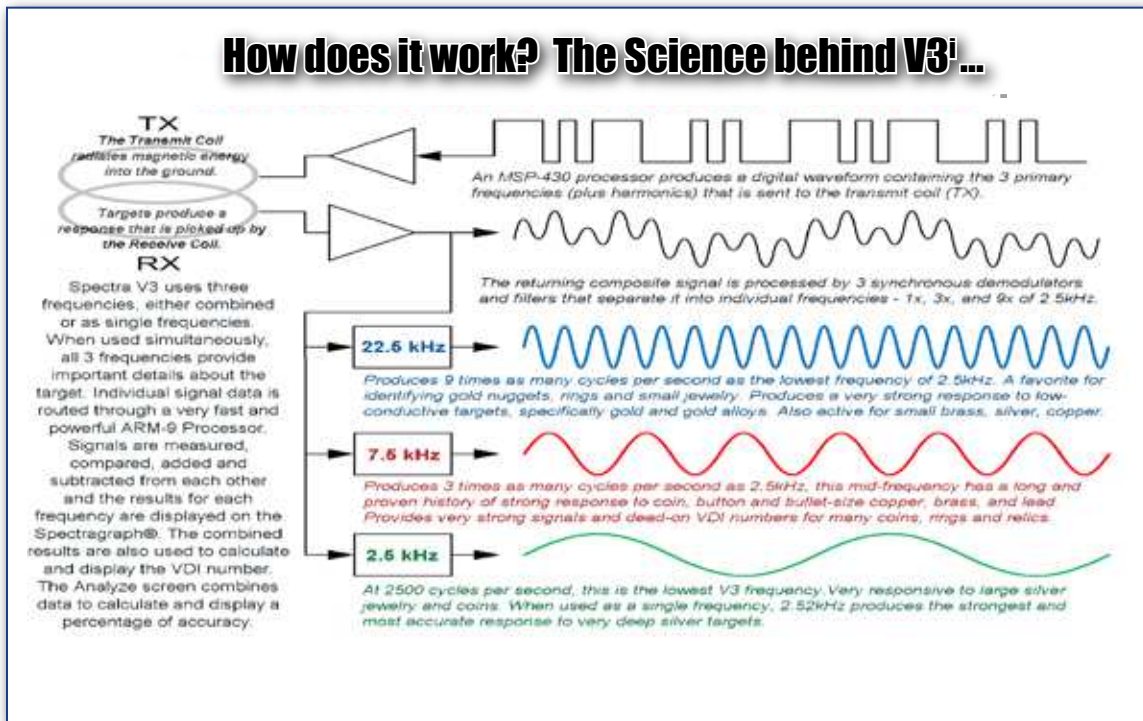
A multi-frequency detector is defined as one that simultaneously—or, in automated sequence—transmits, receives, and processes more than one frequency. Some detectors have the ability to operate at one of several selectable frequencies, but they still are single frequency detectors because during operation they can only transmit and process a single frequency. The same is true of detectors that have a control to slightly vary their operating frequency to minimize interference; even though they have the ability to operate at many (slightly) different frequencies, they are fundamentally single frequency designs. Currently, all multi-frequency hobby detectors run their multiple frequencies simultaneously as opposed to sequentially; they are all characterized by having multiple processing channels in the receive circuitry. Therefore, a 2-frequency detector will have two processing channels. *Spectra***V3**^{i} has three *independent* processing channels; it is a true 3-frequency detector.

This all sounds easy, so where is the confusion? It turns out that (currently) all multi-frequency detectors create a transmit signal that is composed of digital waveforms which are designed to produce peak energies at the desired frequencies. As a side-effect, these digital waveforms also produce undesired harmonic frequencies. Lots and lots of harmonic frequencies, 10's or even 100's of them. These harmonics have no useful energy and are not part of the signal processing. So while we can claim to *transmit* many, many frequencies, we cannot claim to *process* or *use* them. Therefore, we could easily claim the *Spectra* **V3**^{i} *transmits* 17 frequencies, or 28, or 39, or 55—we could get plain silly with this. And such a claim would be true, technically speaking, but since all those extra frequencies are not actually *used*, it would be misleading to make such a claim. White's chooses, instead, to claim the number of frequencies we are actually *using* and *processing*. It may not sound as impressive as a 55-frequency detector, but it's honest and accurate.

Pulse Induction (PI) detectors also utilize a digital (pulse) transmit waveform, so they transmit a tremendous number of harmonic frequencies as well. So is it fair to include pulse induction as a multi-frequency technique? Not really, because PI detectors process in the time domain, not the frequency domain. So even though they use broad-band signals, they are not frequency-based detectors at all. Calling them "multi-frequency" is simply another attempt to confuse the consumer.

Once we get beyond the marketing hype, the real question is: What does multi-frequency do for depth and discrimination? The truth is, any time a detector is simultaneously transmitting more than one frequency, the transmit energy must be divided amongst the frequencies. Therefore, a single frequency detector can usually squeeze out slightly more depth than a multi-frequency design *at that certain frequency*. But this is an advantage only at one frequency, which tends to favor only a narrow range of targets.
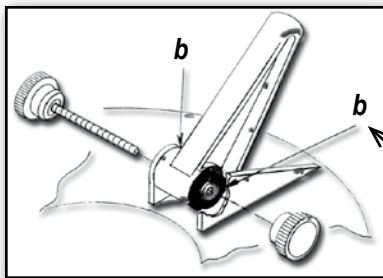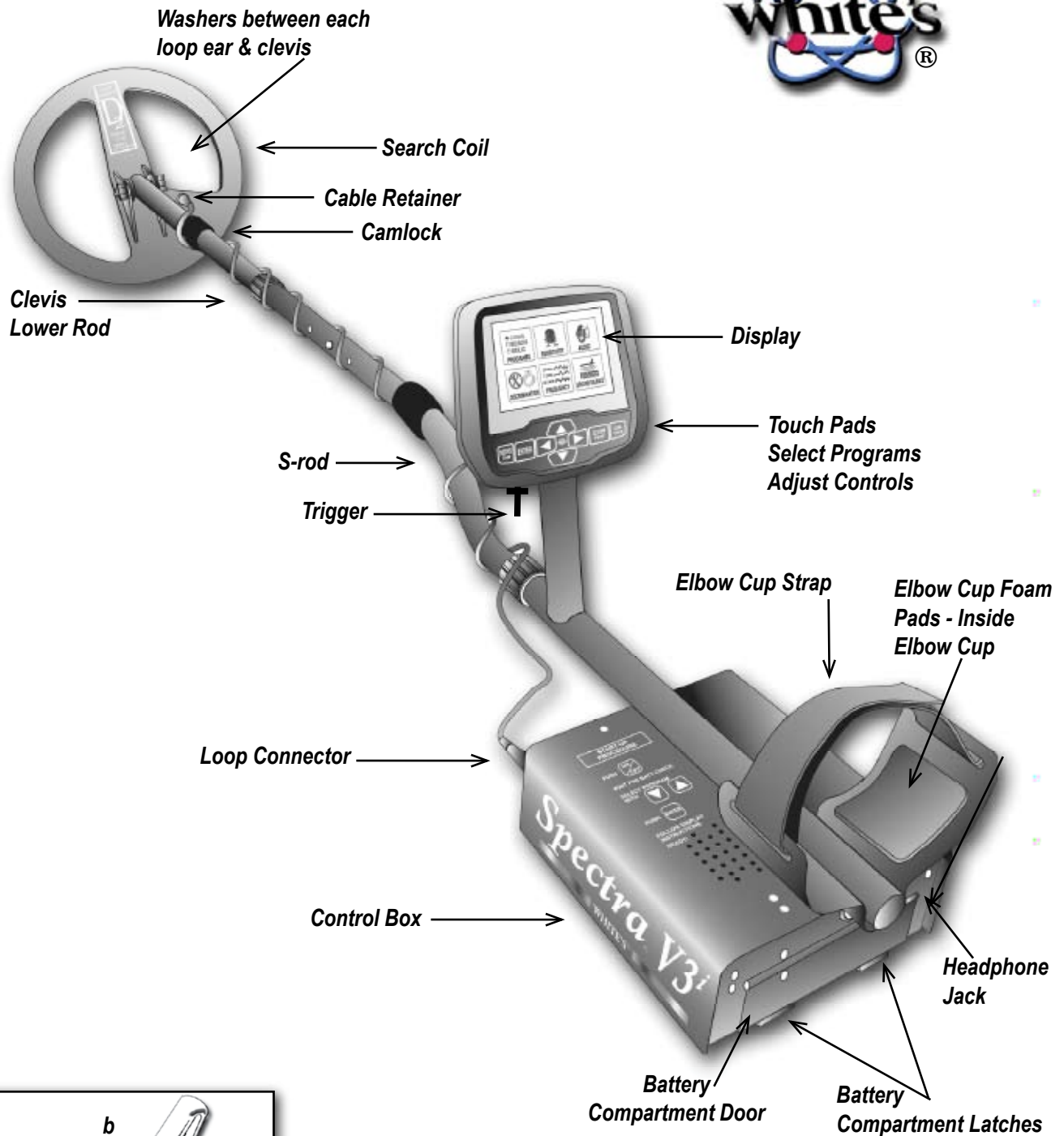
How does it work? The Science behind V3^i ...

TX
The Transmit Coil radiates magnetic energy into the ground.

Targets produce a response that is picked up by the Receive Coil.

RX

Spectra V3 uses three frequencies, either combined or as single frequencies. When used simultaneously, all 3 frequencies provide important details about the target. Individual signal data is routed through a very fast and powerful ARM-9 Processor. Signals are measured, compared, added and subtracted from each other and the results for each frequency are displayed on the Spectragraph®. The combined results are also used to calculate and display the VDI number. The Analyze screen combines data to calculate and display a percentage of accuracy.

An MSP-430 processor produces a digital waveform containing the 3 primary frequencies (plus harmonics) that is sent to the transmit coil (TX).

The returning composite signal is processed by 3 synchronous demodulators and filters that separate it into individual frequencies - 1x, 3x, and 9x of 2.5kHz.

22.5 kHz

Produces 9 times as many cycles per second as the lowest frequency of 2.5kHz. A favorite for identifying gold nuggets, rings and small jewelry. Produces a very strong response to low-conductive targets, specifically gold and gold alloys. Also active for small brass, silver, copper.

7.5 kHz

Produces 3 times as many cycles per second as 2.5kHz, this mid-frequency has a long and proven history of strong response to coin, button and bullet-size copper, brass, and lead. Provides very strong signals and dead-on VDI numbers for many coins, rings and relics.

2.5 kHz

At 2500 cycles per second, this is the lowest V3 frequency. Very responsive to large silver jewelry and coins. When used as a single frequency, 2.52kHz produces the strongest and most accurate response to very deep silver targets.

This is where a multi-frequency detector such as the *Spectra* **V3**^{i} really shines. **V3i** transmits at 2.5kHz, 7.5kHz, and 22.5kHz, making it simultaneously "hot" on silver, relics, and gold. Single frequency detectors are unable to have peak performance over such a wide range of targets. This is an advantage not only in detecting desirable targets, but also in discriminating out undesirable targets. So multi-frequency detectors get excellent depth over a much wider range of targets, and do a better job of identifying targets. But *Spectra* **V3**^{i} can also beat single frequency detectors at their own game: **V3**^{i} has the ability to run in single frequency mode using any of its three frequencies, and the transmit waveform is optimized to put all the energy into that one frequency. So if you want to hunt for only deep silver or only gold jewelry, **V3**^{i} can be optimized for these tasks.

A final advantage of multi-frequency is the ability to simultaneously balance ferrous ground mineralization and conductive salt ground. Single frequency detectors cannot do this, and usually struggle in wet salt sand unless the sensitivity is turned down significantly.

Spectra **V3**^{i} is the first production frequency domain metal detector to simultaneously use more than 2 frequencies. It is also the first multi-frequency detector to offer optimized single frequency modes. And **V3**^{i} is the first to display the target phase response independently for each frequency. White's will continue to be a leading innovator in metal detection technology, and instead of misleading claims, we'll tell you what we are really doing.

ASSEMBLY -

Washers between each loop ear & clevis

Search Coil

Cable Retainer

Camlock

Clevis
Lower Rod

Display

Touch Pads
Select Programs
Adjust Controls

S-rod

Trigger

Elbow Cup Strap

Elbow Cup Foam
Pads - Inside
Elbow Cup

Loop Connector

Spectra V3ⁱ

Control Box

Headphone
Jack

Battery
Compartment Door

Battery
Compartment Latches

b

b

b

*Place soft rubber washer (b)
between clevis and ears - both sides.*

ASSEMBLY INSTRUCTIONS -

1. Remove all parts from shipping carton. Check the assembly page to make sure all parts are present.

2. Use the provided rubber washers between clevis/lower rod and loop ears. Use only nonmetallic washers, fiber bolt, and thumbnut to secure loop/search coil to clevis/lower rod.

3. Unlock "S" rod camlock and insert clevis/lower rod into curved "S" rod so that stainless steel spring clip buttons line up and lock into one of the adjustment holes in the curved "S" rod. Turn camlock to secure. The second or third adjustment holes are suitable for average size adults. Individuals 6' or taller should use the fully extended position. Individuals well over 6' tall should purchase the optional Tall Man Fiber Lower Rod #500-0242-3 and/or #500-0240-1 Tall Man Aluminum "S" Rod.

4. Unravel loop cable and wind the cable around the clevis and rod assembly, first revolution over the top of the rod. Wind cable all the way to the top of the curved "S" rod, about five revolutions. Use the black cable retainers, one near the loop, and one near the top of the curved "S" rod, to hold the loop cable in place.

5. Unlock control box rod cam-lock and insert curved "S" rod so that stainless steel spring clip buttons line up and lock into the rod on top of the control box. The "S" rod is designed to curve up toward the display. However, those who prefer to sweep the loop close to their feet may desire to assemble the "S" rod to curve down toward the ground. Turn cam-lock to secure. Plug loop connector into control box, screw lock ring to secure.

6. Grip the instrument by the handle, with your arm in the elbow cup with strap secure, and sweep the loop/search coil over the floor. If the instrument fit feels uncomfortable, adjust the elbow cup by removing and repositioning the bolt/thumbnut and installing in one of the optional positions. If necessary, readjust clevis/lower rod length with the spring clip buttons and cam-lock so that the search coil can be held near the floor without requiring stooping over.

7. Remove the protective paper from the two black elbow cup foam pads. Carefully align pads on the inside of the elbow cup, one on each side of the center rod, and press firmly into place.

8. Adjust the elbow cup strap so that it is loose enough for you to slide your arm in and out without loosening each time you want to set the detector down. The elbow cup strap provides extra leverage and control. However, some prefer not to use it.

9. Install battery as described in the next section, decal facing down, single larger plastic tab and steel contacts facing toward inside of battery compartment.

10. It should be noted at this point that the Spectra may not work as expected indoors due to the high degree of metals used in modern construction. It is best to tune and practice (outdoors) to ensure stable, predictable results.

11. Your Spectra is designed with an automatic turn OFF if the trigger on the grip (or another control) "is not used" for a period of 30 minutes. This protects the battery from damage (absolute discharge) in case of an accidental turn on during travel or storage. The Spectra will make a specific deep tone musical melody upon automatic turn off. To restart, simply press ON and squeeze and release the trigger on the grip to resume searching. The Spectra returns to pre-turn-off settings.

ASSEMBLY GUIDE

Batteries

The Spectra is provided with two battery packs. The rechargeable Nickel Metal Hydride (NiMH) battery (Orange Decal) will require an initial 3-4 hour battery charge.

To begin using the Spectra immediately, use the back-up "AA" battery pack (Blue Decal).

• The standard battery holder (Blue Decal) holds eight "AA" cell batteries. Alkaline batteries are recommended for use with this battery holder.

• Non-alkaline batteries can be used in this holder. When non-alkaline or rechargeable "AA" cells are used, detecting time (before replacement/recharge) may be reduced or increased depending upon the type of battery used.

• An " Unhappy Battery Icon" will automatically appear on the display (lower left status line) when the batteries become too low (8 volts) to properly operate the Spectra.

• A headphone icon with a battery inside indicates the batteries are low in the wireless headphone. See additional status indications on bottom of control box.

• The battery compartment opens by gently pulling down on the front of each of the two latches (on the bottom of the control box) releasing the catch and hinging open the door. The non-rechargeable battery holder can use many different types of batteries, including rechargeable. This holder is designed for standard size "AA" batteries 50 mm ± .10 mm. Battery lengths shorter than this will likely cause problems with this power supply.

• When the Spectra is turned on the battery voltage will momentarily appear on the opening display (lower left). The degree the battery is filled, toward +, indicates the battery condition. Full Fill = 100% battery life remaining, half fill = 50% battery life remaining.

Battery Voltage Reading

• To recheck the battery voltage during searching, press MENU twice and note battery voltage under BATTERY. Spectra operates correctly between 8 Volts "low battery" and 13 Volts. Squeeze and release Trigger on grip (twice) to return to searching. Initial battery check voltage may indicate abnormally high. With new Alkaline, or a fresh battery charge, the most accurate battery voltage will be indicated after one hour of use.

Using the Standard Battery Holder

• Slide open the battery holder lid (decal side of battery holder) by applying gentle upward pressure on the single large tab of the door so that it unlocks. Slide the door away from the battery box exposing the cell positions.

• Remove any old cells from the holder. Note the "+" and "-" positions of each cell and the "+" and "-" for each position marked inside the cell tray. Install new "AA" cells noting carefully the correct (+) and (-) positions. If any of the cells are installed incorrectly, battery life will be significantly reduced and/or the Spectra may require service by an Authorized Service Center.

• Slide the door closed so that it snaps securely.

• Insert the battery holder into the detector so that the decal is facing down, with the single larger battery holder door tab and metal contact points facing toward the inside of the battery compartment. Close the battery compartment door and secure the two latches on the bottom of the case. Hook the front (nearest the door) of each latch first, and then snap down the rear (furthest from the door).

NiMH Rechargeable Battery

• A rechargeable NiMH (Nickel Metal Hydride) battery (Orange Decal) is provided with your Spectra. This battery can be recharged hundreds of times. Full charge can be achieved anytime during the discharge cycle (a non-memory system). The provided "Smart Charger" and "Charging Cradle/Stand" sense the type of charge the battery needs and automatically adjust the charge cycle. From fully low this system provides a full charge in as little as 3-4 hours. A full charge will last ten to twelve hours of normal use. Battery life will vary with temperature, the number of targets found, and the exact settings used. Six hours is not unusual for extreme high performance settings, or for batteries that have experienced extensive use.

• The battery will lose its charge during storage. If stored inserted in your instrument, this loss will be more significant. It is recommended that the battery be removed from the Spectra during periods of storage. It is not advisable to store rechargeable batteries for long periods of time without use (six + months). If extended storage is necessary, store with a charge (charged). If possible, recharge at least once every six months of non-use.

• Do not discharge the battery in devices other than your metal detector. Unnecessary discharging and/or an absolute discharge will reduce battery life and may damage the battery. Unlike older rechargeable battery designs, the rechargeable battery provided with your Spectra can be recharged at any time. Regardless of whether or not it already has a partial charge, memory will not occur.

• White's has provided the leading edge NiMH rechargeable battery technology with your Spectra. Disregard advice that conflicts with the above recommendations. Care for batteries provided by other manufacturers, or with other White's models, may vary.

• Do not combine (use) any other battery, or any other battery charger, not specifically designed to work with this system.

• The NiMH battery provided with your Spectra may be subject to recycling laws in your area. It is the right thing to do and is often legally required. If, perhaps many years in the future, you are uncertain as to where to return a White's NiMH batteries for recycling, please return it to the place of purchase or any White's Electronics Inc. address circling "the recycling" (trash can) portion of the label.

Charging

- Plug the charger into a standard wall outlet. (110 volts for USA models, 220 volts for UK models).
- To charge, insert the battery into the cradle / stand (only fits one way) plug the charger plug into the back of the cradle / stand. Green light should glow.
- Green and Red Lights ON indicate battery and charger have made a good connection and the battery is charging. The battery charger is designed to charge a completely low battery in as little as 3-4 hours. However, no harm will come to the system leaving it charging for several days (automatic trickle charge).
- Red Light OFF, Green Light ON indicates battery is now fully charged and ready for use and will now simply maintain the full charge indefinitely. It is normal for the battery and charger to get warm during use. However, if either the battery or the charger gets too hot to hold or deforms due to the heat, discontinue use and return for testing.
- When using fresh batteries, the voltage will initially check somewhere in the 10 to 13 volt area. Unlike standard batteries, the rechargeable battery voltage will quickly drop somewhere between 9 and 11 volts and plateau there for most of its life. Once the rechargeable battery voltage drops below this plateau, it will quickly drop below a usable voltage level (8 volts) and thus require a recharge. "Unhappy Battery Icon" will automatically appear on the display when the battery approaches 8 volts. It is recommended to either recharge or switch to "AA" pack when occasional unhappy battery starts to appear (flash) on display. With a consistent unhappy battery, Spectra will not be operating properly and will soon entirely cease to operate.

Owner Registration

How to Access – To access Information / Configure press MENU twice in succession. Arrow down to Owner Registration and press ENTER. To Exit squeeze and release trigger on hand grip twice

Owner Registration – Allows the Spectra owner to embed their name and contact information, protected from tampering, but updateable with original factory code.

• Select Owner Register and press ENTER. Press MENU / TAB to select Register and press ENTER.
   • Password – IMPORTANT! Write down the password or code that automatically appears and keep it in a safe place separate from your Spectra… (Password code will disappear, and must be manual re-entered, after first registration). If you normally keep your instruction manual at home, write it on the inside cover of the manual. Should you ever change addresses or sell your Spectra, this code must be retained and manually re-entered to update or revise your Spectras registration information. To deter theft, without this original disappearing code, significant inconvenience can be expected regarding re-setting the Registration information.

Owner's Name – Use the ARROWs Down / Up, and Left / Right to spell out your name. Or press ENTER to bring up a keyboard and then use ARROWs and ENTER to spell out your name.

   • Select and ENTER blanks to add spaces. If you make an error, to redo that digit, squeeze and release trigger, ARROW back to that digit, and press ENTER to bring the Keyboard back, then redo that digit.

Contact - Press MENU / TAB to exit Name and select Contact. Type out your contact information using ARROWs, or pressing Menu to bring up the keyboard then ARROWs and ENTER.

SAVE – Use MENU / TAB to select SAVE, press ENTER to SAVE your Registration.

Wireless Headphones

Set Up -

■ Locate battery door- open by turning counter clockwise to "Open" position.

■ Install (2) AA Batteries (provided) Take care to orient batteries per embossed example- one up- one down.

■ Replace Battery door- turn clockwise to "Lock" position.

■ SpectraSound™ System comes factory pre-connected (channel 4) allowing the "Quick Connect Sequence".

Quick Connect Sequence -

Wireless Headphone - Working

Enable
Channel
4
Power level
3
Single (Monitor battery)
Version 1.3
2.41 Volts

Connect   Exit

(((whites)))
SpectraSound™

Wireless Headphone - Quick Connect

• Select Audio or Zoom Audio

• ▼ to ◯ Wireless Headphone. Press ENTER

• Press ENTER to enable ☒

• Press and hold headphone power button.

• Headphone is connected within five seconds when you hear... ♫ ♪

• Trigger to search.

■ Headphones automatically turn off with the detector. To manually turn OFF headphones, press headphone power button. You will hear ♫ ♪

■ The metal detector speaker will connect within ten seconds. More options available in "Information/ConfigureSection".

■ *TROUBLESHOOTING -*
Substandard wireless sound, or built-in Speaker beeps when Wireless are used.
   • Select a different wireless channel.
   • Increase Wireless Power
   • Turn OFF Speaker under Signal (Monitor Battery)
   • Check Wireless Battery.
   • Check voltage - replace as needed.

(((whites®)))
SpectraSound™

A S S E M B L Y   G U I D E

First Aid

• **Help Balloons -** From menu screens and Zoom menus, trigger forward - brings up a *"Help Balloon"* that offers more information about the menu item.

Trigger Forward — Over-power the loop to find deeper targets. (Rapid battery discharge) — Help Balloon
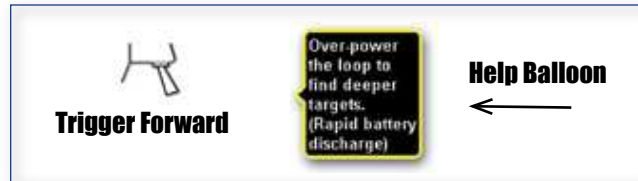
• **COMPLETE OWNER'S GUIDE -** All of Spectra's systems and controls are explained in complete detail.

• **DVD -** A short DVD designed to visually familiarize and instruct.

• **Website/Forum -** Ask questions, comment and share your experiences with White's Spectra owners at White's Website Forum: www.whiteselectronics.com.

• **Live Help -** Consult your local Dealer or contact White's Authorized Regional Distributor at 1-800-547-6911. *We will be happy to help!*

NOTE –
Explore your Spectra metal detector with complete confidence.
You cannot harm or destroy the original factory presets or software.
Original programs are easily restored!

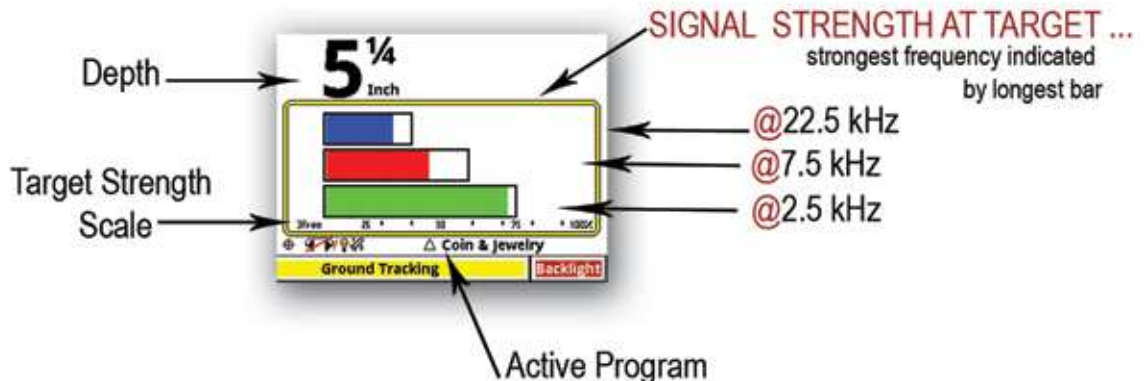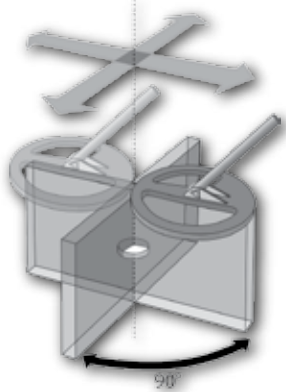## On-Board Answers

MENU / TAB — Hold

?

ZOOM / VIEW — Push

Two keys to access an on-board reference manual. Menu/Zoom for immediate on-board answers to almost any question!

First Time Out with Spectra V3*i* - "Turn On And Go" ...

Press ON/OFF.

Optionally… Press ZOOM to select text size.

Squeeze & release Trigger on the handle grip.

Hold Trigger & hold ENTER, pump search coil (loop) up and down on the ground until background hum steadies, release ENTER… and then release Trigger and begin searching. (Note releasing Trigger before releasing ENTER) locks Spectra in pinpoint mode, squeeze and release trigger twice to unlock pinpoint.

Sweep search coil close to the ground, from side to side, overlapping each pass.

Locate a consistent "BEEP" upon several passes of the search coil.

Look at display. VDI, Blocks, and ICON, indicate a metal target worthy of digging.

Pinpoint squeeze & hold toggle on the grip and slowly "**+**" the area. Depth in inches and maximum bars indicates target center.

Pinpoint -

SIGNAL STRENGTH AT TARGET ...
strongest frequency indicated
by longest bar

Depth — 5 ¼ Inch

@22.5 kHz
@7.5 kHz
@2.5 kHz

Target Strength Scale

△ Coin & Jewelry
Ground Tracking   Backlight

Active Program

NO LOOP MOTION REQUIRED

A S S E M B L Y   G U I D E

Explore Your Spectra

Explore your Spectra metal detector with complete confidence. You cannot harm or destroy the original factory presets or software. Original programs are easily restored under Programs, Restore.

Option selections remain through ON/OFF and battery changes. To return to original selections, manually return to underlined or check marked levels, or Restore.

A Word About "Turn On & Go" -

All the Spectra features and performance are available by selecting a Program suited to your type of hunting. Typical settings and uses are available within the Program choices. Experts have developed these programs for you. Feel free to edit and experiment. Remember - It is easy to RESTORE.

In depth Turn-On & Go -

• Press ON/OFF: When first turned on the Spectra display shows the battery condition, (owner details) if registered, ARROW DOWN for more information about the detector and general features.

• Option - press ZOOM to select the size of text that best suits your eyesight and preference. Larger size text slightly changes display arrangements or feature positions.

• Squeeze and release the Trigger on the handle grip.

• Ground Balance - Squeeze and hold the Trigger press and hold the ENTER button, pump the search coil (loop) over the ground (1-12 inches) until the background hum becomes steady, release ENTER and then release trigger and begin searching.
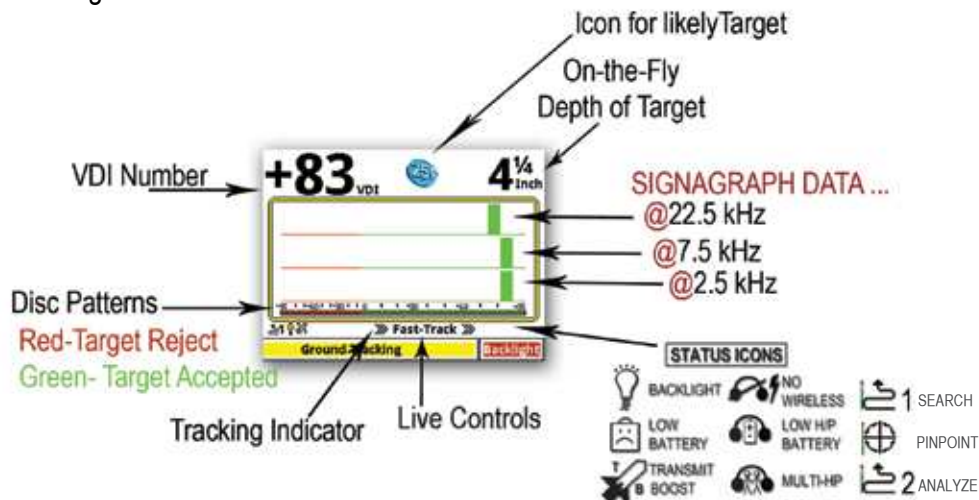
At anytime during searching, this "ground balance sequence" may be repeated to ground balance the Spectra to ignore ground minerals. The Spectra will automatically track to normal ground mineral changes. Quick (abrupt) and dramatic (usually visible) ground changes may require a manual sequence such as dirt to gravel, dry sand to wet salt sand, wood chips to dirt, sand to dirt, sand/dirt to rock, or other obvious ground changes.

• At initial turn-on, the Spectra begins in a general COIN & JEWELRY Program. This program provides typical coin discrimination (reject iron and small foil, accept nickels and up). The Discrimination pattern is visible by a color bar located across the bottom of the yellow/tan rectangle, RED representing rejected ranges, and GREEN representing accepted ranges.

• If you have already been using the Spectra and have switched to a different Program, the Spectra retains your preference and will begin in that Program (last used Program always returns regardless of battery condition or installation).

• The Program in use is indicated on the center lower portion of the display. ✓ COIN & JEWELRY indicates that this is the original factory COIN & JEWELRY program, all settings are at the original default or SAVED levels. A triangle in front of COIN & JEWELRY indicates there has been a recent change to the COIN & JEWELRY program. (+/-) Behind COIN & JEWELRY indicates there is another program with the same name that has different settings in the Library.

Backlight - On the same line as COIN & JEWELRY, to the far left, a light bulb indicates the display BACK-LIGHT is on. Press "ARROW RIGHT" until Backlight appears highlighted on the far right bottom corner of display. Press "ARROW UP" and "ARROW DOWN" to adjust the degree of backlight. Backlight will affect the ability to see the display in all light conditions. At medium backlight settings 15% reduction in battery life is expected (a 1.5 hour reduction out of ten hours use). At maximum backlight settings a 25% reduction in battery life is expected.

Live Controls - across the bottom of the display offer quick and easy "on the fly" adjustment of all common metal detector features. Use ARROW LEFT & RIGHT to highlight a feature, then ARROW UP & DOWN to adjust it or ENTER to turn it ON/OFF. No need to enter a MENU. Adjustments are instant, like having knobs! Another White's innovation.
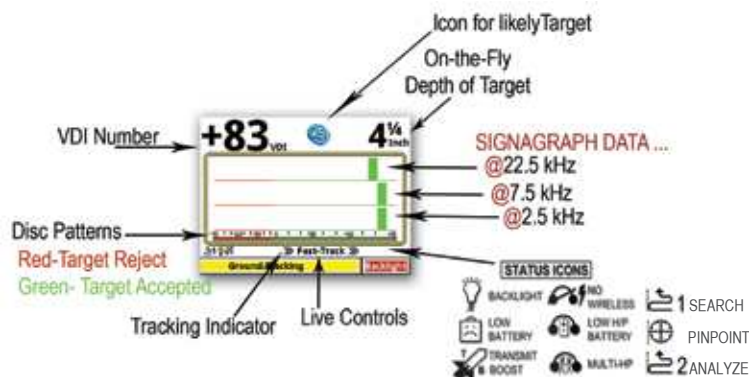
VDI Numbers and Spectragraph "R" - Within the yellow / tan rectangle which dominates the display important target indications are provided;

• A small target reference number scale VDI (Visual Discrimination Indication numbers) from **-95-0-+95** are listed. **-95 to 0** represents the negative (ferrous) or magnetic target range (most iron and steel). **+1 to +95** represents the conductive (nonferrous) target range (most precious metals). The VDI number will vary depending upon the exact characteristics of the metal itself. These VDI numbers are the same reference numbers the Spectra uses to accept or reject different target types, especially important when customizing the Discrimination.

The current target VDI number appears much larger above the rectangle upper left side of display. Listen for a solid repeatable (over multiple search coil passes) audio "beep" then look for a consistent Icon and/or VDI number indicating a good quality metal target.

• While sweeping the search coil metal targets will produce blocks above the -95-0-+95 metal range for each frequency currently in use. Their position in relation to the -95-0-+95 range will indicate the electrical characteristics (target signature) of the metal itself, which is based on the exact metal alloy **and** size.

In the COIN & JEWELRY Program rejected VDI range blocks appear in RED, Accept VDI range blocks appear in Green. Taller and narrower block patterns indicate higher quality metal alloys. Top block (always the highest frequency) represents 22.5 kHz, center blocks 7.5 kHz, and bottom blocks (always the lowest frequency) 2.5 kHz. Typically gold and nickel respond better / stronger at 22.5 kHz, brass better / stronger at 7.5, and silver/copper better / stronger at 2.5 kHz. Noting which line of blocks fades last (lingers longest) is a further indication of the targets likely alloy.

Multiple targets near each other can be tricky. When unusual variations are noticed, sweep the area from several different directions and/or hold the toggle on the grip and "X" the area to check for multiple targets. Then sweep each separately and note audio and display.

ICONS - In combination with the VDI number and target signature blocks, an ICON will appear above the rectangle in the upper right side of display, and a large VDI (visual discrimination indication or reference number) that represents that range will appear on the upper left side of the display. Some variation is expected from one search coil sweep to the next. However, overall consistency over several sweeps will produce an accurate indication of the metal alloy. Multiple targets near each other can be tricky. When unusual variations are noticed, sweep the area from several different directions, hold the toggle, to check for multiple targets.

• Sweep the search coil close to the ground, scrubbing in grass, an inch above rocky, sandy, or coarse grounds, from side to side, overlapping each pass by 50%. Avoid arching at the end of each sweep, maintain about two seconds per pass from left to right and about two seconds returning from right to left. The search coil must remain in motion for metals to respond.

• Ignore the display and listen for a solid sounding, repeatable audio "BEEP" upon several passes of the search coil. Ignore inconsistent, or broken sounds. Solid, repeatable "BEEPs", after multiple passes indicate a metal target of interest.

• Then look at display. Once a solid and repeatable "BEEP" has been located, sweep over it several times, and look at the display. A narrow tall bar graph in a desired range plus the large VDI number in the upper left side of display, and a desired target ICON will indicate a good metal target worth digging.
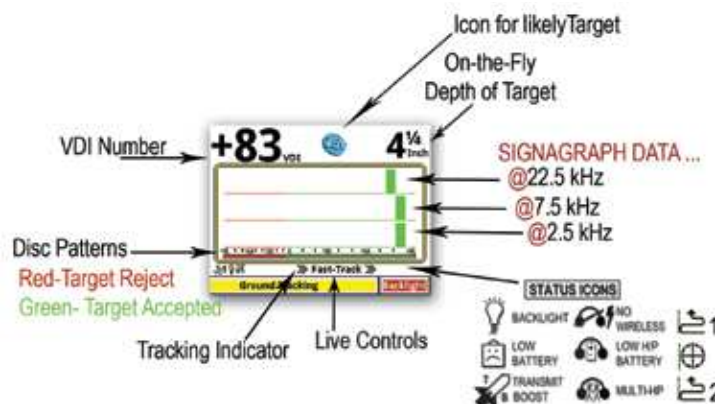
• Optional Step (Analyze) Push the toggle forward (away from the grip) sweep over the target several times, and look at the analysis. The Analyze Screen provides a visual of the actual target signal. The Screen provides an indication of the size of the target (distance between the two black lines), and the differences at each frequency. Each of the three frequencies are color coded (22.5 kHz, 7.5 kHz, 2.5 kHz).

Most metal alloys produce a set of smooth bumps similar to a single camel hump, slightly different in height (signal strength) at each primary frequency. Coins on edge or irregular shapes often produce dips before and/or after this hump. "Size" will track search coil sweep speed. Different metal alloys respond at different frequencies. As well, irregularities (dips in normal pattern) at specific frequencies better identifies trash, particularly iron. The sizing rule is shown on the lower left side of display. This size applies to each increment marked with dots across the bottom of the screen. The default shows two inches as the display width. This would indicate that the data shown from the left to right edge of the display was collected within a time interval where the loop moved two inches. Accuracy depends on search coil sweep speed, and consistency.

Next to the large VDI number is a calculation displayed as a percentage (%). 100% is sure target information, and 10% should be considered questionable. If the information is questionable, note the depth. If it is a deeper target (5+ inches) questionable display information is typical and one may still want to dig.

Pinpoint -

SWEEP AND ANALYZE
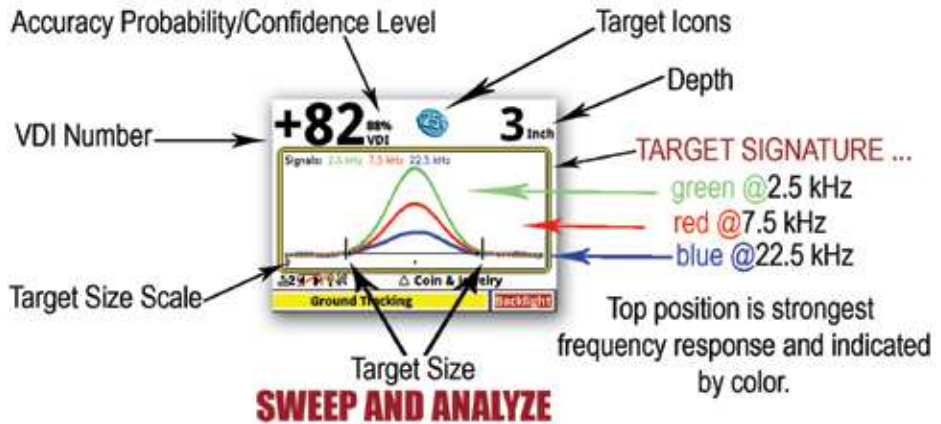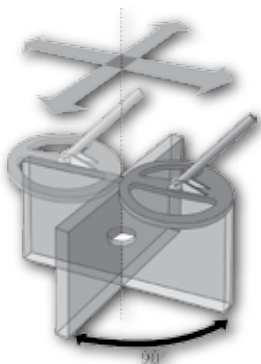
• To Pinpoint exactly where to dig, squeeze and hold the toggle in (towards the grip) and slowly "+" the area where the "BEEP" was heard. Standard Equipment "DD" loop requires special attention to side to side, then forward to back. Pivot 90 degrees and repeat "+" area. Display indicates depth in inches and bars indicates target center. ***The strongest signal will be the exact center of the target.***

NOTE: With multi frequency pinpoint bar option, strongest bar suggest likely target alloy.   Nickel, gold, and small targets strongest at 22.5 kHz (top bar), brass strongest at 7.5 kHz (center bar), silver/copper strongest at 2.5 kHz (bottom bar).

The Spectra can be locked into the pinpoint mode, while squeezing the trigger, press and hold ENTER and release the trigger, then release ENTER. Pinpoint mode will then remain until trigger is squeezed and released twice. Note, it is normal for the pinpoint mode threshold to gradually wander up or down over relatively short periods of time. Pinpoint is not intended for prolonged searching.

NAVIGATION -
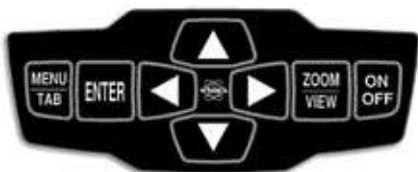
UP/DOWN moves the Cursor vertical to select from a list.

SIDE/SIDE moves the highlighted selection horizontally.

MENU/TAB brings up menu or moves the Cursor to the next item or selection on the screen. Selection is highlighted.
MENU/TAB x2 brings up information screen. Includes backlight and advanced menu (see page 11).

ENTER selects the option.

ZOOM/VIEW increases text size or provides more detailed Menu.

BACKUP or ESCAPE squeeze and release trigger from any Menu or control.

Live Controls

• The LIVE CONTROLS (Like Backlight) across the bottom of the display offer quick and easy "on the fly" adjustment of all the normal metal detector controls. Use ARROW LEFT & RIGHT to highlight a feature, then ARROW UP & DOWN to adjust, ENTER to activate or deactivate. No need to enter a MENU. Adjustments are instant, like having control knobs.

• Maximize Live Controls by holding ZOOM and pressing ARROW Up X1 or X2.

• Minimize or hide Live Controls by holding ZOOM and pressing ARROW Down X1, X2, or X3.

• Minimize or hide Live Controls when few further adjustments are expected allowing a better target screen size. To bring them back anytime on the fly Minimized or Full Size, hold ZOOM and press ARROW UP.

• The selection of live controls and the order in which they appear changes depending on which Program is selected. In other words COIN & JEWELRY has different Live Controls and a different order compared to PROSPECTING. Live controls can be selected, rearranged, and changed in their appearance (Expert Menu).

• Personal preference selections within the Expert Menu will automatically export to the Live Controls and Six Block Menu. For example selecting a different method of making Discrimination adjustments within the Expert Menu will automatically install that same specific method in the Live Controls and Six Block Menu.
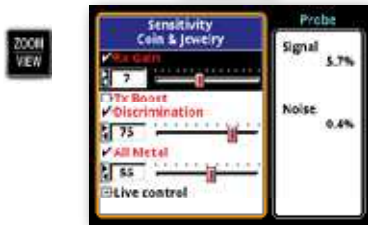
• The COIN & JEWELRY program initially offers the most popular options and arrangement one would expect to find on most high-end general use metal detectors.

Using Live Controls

Sensitivty Live Control used as EXAMPLE

ENTER

Sensitivity

ZOOM VIEW
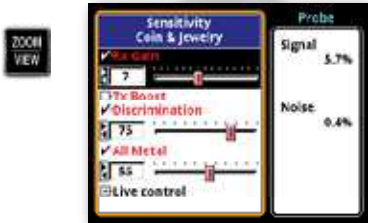
Sensitivity Zoomed

Programs - Sensitivity - Audio - Discrimination -Frequency - Ground Balance/Tracking

The Live Control Bar across the bottom of the display for quick and easy on-the-fly adjustment. Spectra continues to operate normally while these settings are being changed. Use ◄ ► to highlight, ▲ ▼ to adjust, or press ENTER to pop up the control. Press ZOOM to expand the content. Detector continues to operate to allow for perfect adjustments.

LIVE CONTROLS - Sensitivity

ENTER

Sensitivity

ZOOM VIEW

Sensitivity Zoomed

Probe - Highlight Sensitivity, press Zoom

Percentage indicator of signal capacity- to-noise ratio.
   a. Signal % = not returning from ground.
   b. Noise % = external electrical and ground noise.

Tip ... The "preset" factory program settings are always marked with a checkmark or the value is underlined. When changing Sensitivity on RX Gain, reground balance is recommended - see Ground Balance/Tracking page 15.

LIVE CONTROLS - Ground Balance/Tracking

ENTER

Ground Balance/Tracking

ZOOM VIEW

Ground Balance/Tracking Zoomed

Ground Probe - Highlight Ground Tracking, press Zoom

Provides helpful information -
• To determine the severity of ground (weak ground vs strong ground).
• Targets can also be analyzed for VDI number, phase and target strength at each frequency. To use - (from Zoomed Live Control) Menu/Tab to Zero and press Enter with loop in air. Hold loop on the ground or target to read results.

- Sensitivity, and Ground Track Live controls - When Zoomed, (highlight then press ZOOM) provide additional measurements used for advanced comparisons and option selections.

  - Sensitivity Live Control Zoomed – Probe provides a Signal %,, and Noise %.
  - Ground Tracking Live Control Zoomed – Provides a Ground Probe for measuring and comparing the ground, or a target in the ground. The probe provides phase, phase angle, and signal strength, at each primary frequency.

- ***"Quick Save"*** During adjustment of any Live Control, or within any Menu one change can be quickly added individually as that programs new Saved Defaults "quick save".


- Immediately after making a single Live Control adjustment, if you want to then Save it as a default for that Program, press and hold ENTER, and press MENU (new box appears).

- Use ARROW Up and Down to select "Save As Default" and press ENTER.

- That individual change has now been added as that Programs new default setting.

- Restore Default, reverts "only that specific setting" to it's original or last Saved setting for that Program.

- To Common saves that setting to the common group. From Common installs the setting already in the common group of selections.

- Exit, exits that option or squeeze and release Trigger to exit.

- RESTORE under Programs will now restore that program to original, with the addition of that single change you "SAVED as Default".

- This sequence only saves the very last change. It will not save multiple changes nor will it SAVE multiple VDI Accept/Reject changes within the Disc Edit Feature. Only one change (the very last one made) will be saved as default.

- To use this "quick save" method to save multiple changes, first make all the desired changes, highlight **Program Live Control**, hold ENTER, press MENU, select SAVE as Default, and Press ENTER. Multiple changes to any program selected via Live Control can be retained by using the "Quick Save".

- "Quick Save" also can be used in any Menu to save any individual change as a default for the current Program. After a change, hold MENU, press ENTER, select Save As Default, press ENTER.

MENU -
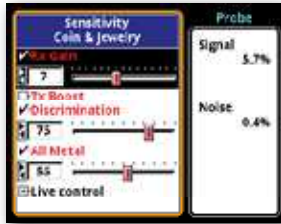
When a Live Control is selected *and* highlighted with ARROW LEFT & RIGHT, pressing and releasing ZOOM accesses more options for that specific option, next level menu. *At any point in a regular or zoomed menu, pushing the toggle forward accesses "Help Balloon" to describe that particular option.* Help Balloons do not appear on unzoomed Live Controls. Squeeze and release the toggle to return to a search mode.

Trigger Forward

Over-power the loop to find deeper targets. (Rapid battery discharge)

Help Balloon

• Live Controls are basically the same features and adjustments listed under Six Block MENU. Changes to the Live Controls show up in the MENU and Changes in the MENU show up as changes in the Live CONTROLS. The Spectra remembers and automatically saves all changes automatically. Restore under Program restores to original settings.

• LIVE CONTROLS, MENU, and EXPERT MENU are all different windows for the same set of features or adjustments. Progressively greater detail and option choices are offered. This progression keeps rarely adjusted features out of the way during normal searching yet allowing quick access from either Live Controls or Menu. LIVE CONTROL features can originate from either MENU or Expert Menu. Using some Programs you will note options on the live controls that are not found within the regular MENU. These are EXPERT menu features that are made available on the live controls to enhance that specific Program.

Navigation and Program Selection -

• In addition to accessing specific sections of the MENU from the LIVE CONTROLS, to access the regular formatted MENU press MENU.

• Six categories appear following the options one would expect to find on a typical metal detector. Use the Arrows to highlight (select) a category, press ENTER.

Programs -

Program Choices
- ⊕△Coin & Jewelry
- ○✓Salt Beach
- ○✓Relic
- ○✓Prospecting
- ○✓Deep Silver
- ○✓High Trash
- ○✓Meteorite
- ○✓Hi-Pro
- ○✓Mixed Mode Pro
- ○△Common
- ▣Restore

Check mark ✓ in front of program name indicates it is the original factory or manual saved default program (no changes from default settings).

Triangle △ in front of Program name indicates it has been modified from the original or manually saved defaults (changed from default).

"+/-" after Program indicates the Library contains a Program of the same name that has different settings.

- Coin & Jewelry – Provides for typical COIN & JEWELRY general use, audio accepts mid-range aluminum (pull tabs).

- Salt Beach – Provides for typical saltwater beach use primarily searching for jewelry and coins. Employs a special salt subtraction multi-frequency technique. May also offer improved performance in alkali desert regions and high fertilized farm fields when wet.

- Relic – Optimized for hunting encampments and abandoned homestead use. Very little rejection, small and large iron indicated by a lower pitched beep.

- Prospecting – For Gold Nugget searching. Also good for other types of nature-metals prospecting, copper and silver nuggets.

- Deep Silver – Accepts only high-range VDI numbers for high-range targets (silver). When the entire low range is eliminated, one can better concentrate or separate the high VDI numbers (silver) among trash.

- High Trash – High trash rejection for difficult (trashy) public areas. Attempts to dissect/reject a majority of common trash while accepting a majority of common good targets. Always a gamble, however, hedges the odds considerably towards spending more time digging good targets in high trash areas.

- Meteorite – Provides specifically for nickel/iron meteorites (accepts only negative VDI numbers).

- Hi Pro – High performance general-purpose program intended for high-level users. User must interpret most trash from the display indications. Requires a high level of target response interpretation.

- Mixed Mode Pro – Another high performance general-purpose program intended for high-level users. Combines aspects of both Discrimination and All Metal Modes using Stereo Mixed Mode Audio. Requires a high level of target response interpretation.

• Common -   A place to select options/features you can insert (section by section) from the expert Menu into any other program. Example: set all the volume and tones the way you like them in Common. Then in the Expert Menu, under the Program Section, the Setup feature, you can substitute your common audio preferences in bulk (as a group of selections) into any program. Common is used similar to COPY/PASTE to avoid repetitive detailing. *Note:* COMMON, from the factory, contains a showroom demonstration program designed to work in high interference indoor areas (Reduced Sensitivity) intended only for Dealer Showrooms or demonstrating and experimenting with basic Spectra functions indoors.

   • Using Common as a complete user-search program, you can set some or all preferred levels and feature choices. Most categories of your COMMON settings can be substituted to any Program effectively overriding all other selections for that category of options. It is not necessary to set all categories for your common preferred settings.

   • Expert, Program, Setup, Exclude allows you to exclude only the following sections as complete groups of choices - Discrimination, Sensitivity, Volume & Threshold, Audio Tones, Audio Modes, Frequency, Ground Tracking, Filter & Speed, and Configuration.

   • To eliminate your Common selections for that program go to Expert, Program, Setup, Exclude, and deselect sections for that Program by category then re-save that program.

   • Original (Indoor Showroom) settings are automatically saved in the library under COMMON.

   • Because of higher-level use, Common is the only Program that cannot be erased.

• Restore – Returns the specified Program to the original or last manually SAVED defaults. Changes that were automatically saved will all return to their last manually saved defaults. In other words, if you have not manually saved anything, Restore returns everything to original factory recommended settings for that program.

   • Select RESTORE with ARROW Up & Down, then press ENTER.
   • Use ARROW Up & Down to select the PROGRAM you wish to restore.
   • Press MENU / TAB to toggle between highlighting RESTORE or CANCEL.

TO RESTORE FACTORY PROGRAMS

FROM   [Program Choices list: Coin & Jewelry, Salt Beach, Relic, Prospecting, Deep Silver, High Trash, Meteorite, Hi-Pro, Mixed Mode Pro, Common, Restore]   ▼ to RESTORE - Press ENTER

Use ▲▼ to select program. Use MENU/TAB to highlight RESTORE Press ENTER

Selected program displays check mark and is restored to factory settings.
   • Wireless Headphone "enable on/off setting is NOT changed by "Restore".
   • Removing battery does NOT restore factory programs.

- Press ENTER to either RESTORE that PROGRAM or CANCEL.

- Squeeze and release toggle "once" to exit to six block MENU,
  squeeze and release toggle "twice" to exit to the search mode.

Memory Capabilities - The Spectra offers the most intuitive and advanced memory system ever offered with a metal detector.

- A MENU listing of an unchanged, original, or manually saved Program has a "Check" mark ✓ . A MENU listing of a modified Program has a "Triangle" △ . Preset levels are underlined in the Live Controls.

- Setting or option changes remain as changed, removed battery or not. ***Note:*** If the battery fails or is removed during use, the exact settings from the last OFF cycle will return.

- Excluding "global settings" (described below) most Changes made to one Program (COIN) are not changed in other Programs. The COMMON feature (described under Programs) allows sharing.

- If you don't like the change you made, change it back manually, or use RESTORE under Programs.

- If you want your new settings to be the permanent defaults for that Program (line under your custom setting, or check mark), manually Save under Expert / Programs. Or SAVE an individual setting only from the Live control by selecting and adjusting it, then holding Enter and pressing MENU, Arrow to Save as Default, and press ENTER.

- If you want to go back to all the original settings, RESTORE under Programs. Restores to original or last manual Save.

- Can't remember if you changed it or not? Look at the name of the Program, triangle in front indicates recent change, "+ / -" behind indicates another Program with the same name exists but is different.

- Some options (because of the way they are normally used) are not included in regular manual Save sequences. Change them once in one Program and they remain at that setting for all Programs. They stay changed for all programs until manually changed back. (Global Selection)

    - All or part of the following options are treated as ***"global selections"*** exempt from the standard Save sequences;
        Backlight, Metric Units, Wireless Selections, Frequency Offset,
        (Menu – Size, Expert, Wrap, Top), (Control - Size, Wrap, Min, Hide)
        Battery Type, Auto Power Off Time, Key click, Effects, Audio Samples,
        Status Normal, Auto Track Report, Bookmarks.

Sensitivity -

• Press MENU, ARROW to Sensitivity, press ENTER.

• Rx Gain – (Formally called Pre-Amp Gain or Receive Gain) Use ARROW left and right to adjust. Adjusts the search coil receive signal prior to entering the electronic circuitry for signal processing (pre-amp). Constant OVERLOAD signals (not over a target) indicated by a low pitch audio beep and display OVERLOAD indication require a decreased Rx Gain setting.   Smooth, stable, predictable results and little or no overload suggest a higher Rx Gain setting might be usable in that area.

• Tx Boost – Dramatically increases the signal being sent (transmitted) to the search coil (loop). By increasing the transmit signal, the receive signal is also increased. In low mineralized ground, Tx Boost will increase detection depth, however, battery life is also reduced significantly, perhaps as much as 50%. May require adjustment to Rx Gain, Discrimination, and All Metal sensitivity levels. Tx Boost may not be usable in some ground.
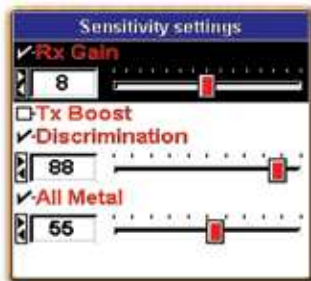
• Discrimination – (Formally called AC or Motion Sensitivity). Adjust the sensitivity (responsiveness) of the Motion Discrimination search modes. The highest setting that will operate smooth, stable, and predictably provides the best detection results. Usually Discrimination Sensitivity is secondary to Rx Gain to reduce external electrical noise or interference.

• All Metal – (Formally Called DC or Non-Motion Sensitivity). Adjust the sensitivity (responsiveness) of the All Metal and Pinpoint search modes. The highest setting that will operate smooth, stable, and predictably, and provides good pinpoint results, is recommended. Reduced levels typically pinpoint better, however, do not detect or pinpoint as deep.

Two keys to access an on-board reference manual. Menu/Zoom for immediate on-board answers to almost any question!

Audio -

• Target Volume – How loudly a metal target "beeps". Use the ARROW Left & Right to adjust the target volume. During adjustment, a sample level is indicated continuously when the trigger is pushed forward.

• Audio Threshold – How loud the Threshold (continuous slight hum) is heard during searching. Use the ARROW Left & Right to adjust. During threshold adjustment, a sample of the current Threshold level is heard when trigger is pushed forward. "0" = silent search (no threshold during searching). Experts recommend a slight threshold, as soft as you can still hear it. Adjusting the audio tone (next option) may alter you're preferred Volume & Threshold settings.

      • Tone – Target Tone or Pitch. Use ARROW Left & Right to adjust the tone or pitch of the "beep" (the "beep" a metal target produces). Select a tone or pitch to suit your hearing. Again, during adjustment a sample of the current tone or pitch is heard when the trigger is pushed forward.

      • Threshold Tone or Pitch. Use the ARROW Left & Right to select the Tone or Pitch of the Threshold. Experts recommend you set the Threshold pitch significantly different compared to the Target Tone Pitch. In this way, target signals are more easily recognized over the continuous threshold hum. Again, during threshold adjustment a sample tone or pitch is heard when the trigger is pushed forward.

      • Tone ID – Selecting Tone ID and pressing ENTER turns ON ("X" in box) or OFF ("empty box") the Tone ID feature. When ON, targets sound progressively higher pitched toward +95 on the VDI scale. If accepted by the discrimination settings, iron type targets will produce the lowest pitch, large silver will produce the highest pitch. Nickels in the mid range indicate with the most medium pitch.

      Discrimination rejected target signals are still suppressed. With some practice, the pitch of the "beep" immediately indicates the approximate VDI range of the target without noting the display. Tone ID is used to highlight target signal ranges of greater or lesser interest.

      Additional Tone ID options are offered in the Expert Menu.

Wireless Headphones –

Select Wireless Headphones and press ENTER.

SpectraSound System comes factory pre-connected (*Channel 4*) allowing the *"Quick Connect Sequence"*.

Audio

Audio Zoomed

Wireless Headphone - Quick Connect

• Select Audio or Zoom Audio

• ▼ to ◯ Wireless Headphone. Press ENTER

• Press ENTER to enable ☒

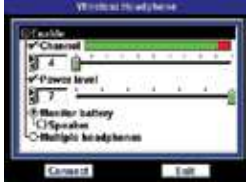• Press and hold headphone power button.

• Headphone is connected within five seconds when you hear...

• Trigger to search.

TIPS ...

Headphones automatically turn off with the detector. To manually turn OFF headphones, press headphone power button. You will hear The metal detector speaker will connect within ten seconds.

• Press ENTER to Enable "X" in box" (turn on) Wireless Headphone transmitter.

• Press Wireless Headphone Power Button to turn ON Wireless Headphone. You will hear the ♪ ♪ up tone.

• *Note:* The Spectra and Spectra Wireless headphone are preset for automatic CONNECT on channel 4, no further connection steps are initially required. Turn ON/OFF wireless headphone Power Button automatically selects between the Spectra's built in Speaker, and the wireless Headphones. However, once a different channel has been selected, a Connect sequence is then required to Enable the Wireless Headphones.

• If there is significant wireless channel interference, the built in speaker will occasionally sound. A different wireless channel should be considered.

• Connect Sequence "AFTER CHANNEL CHANGE" described below – MENU/TAB to Connect, Press ENTER, Hold Power button on Wireless Headphone, beep-BEEP, beep-BEEP, ♪ ♪ ♪ ♪ and display prompts indicates connection made, squeeze and release trigger to search with wireless activated.

• Selecting a different wireless channel is provided to overcome any area wireless interference.

• Arrow down to Channel, Select (arrow left & right) to find a Channel free of interference.
Color Bar indicates level of external interference for each channel choice. Green
representing clear channel, Red representing external interference. Ideally, select
the channel with the largest portion of green within the bar.

• A Power Level is provided to drive the headphone transmitter with enough power for a reasonable
distance or wireless signal resistance.

• Arrow down to Power Level, Select (arrow left & right) a power level strong
enough to provide good quality sound, however, not so strong as to needlessly
waste battery life.

• A speaker option is provided to allow the Spectra to monitor the Wireless Battery and also automatic se-
lection between the Spectra s built in speaker and the wireless headphone, simple by turning wireless headphones
On/Off. May take 5 seconds +/- to make or break a wireless connection (switching between wireless and built in
speaker).

• Arrow down to Signal Monitor Battery, and press ENTER to deactivate or activate monitoring
wireless battery.

• Speaker, activated automatically selects between built-in speaker and Wireless headphones.
Spectra keeps looking for a wireless during built in speaker use, some minor additional
battery life will be used. If Wireless Headphones are not used, it is best to disable
Monitor Battery.

• For multi wireless headphone use;

• Plug in headphones will always work alone or in combination with Wireless
headphones and multi users. Simply plug them in.

• For multi Wireless headphone use, Arrow down to Multiple headphone and press
ENTER. MENU/TAB to Connect, and press ENTER. Hold ALL wireless Headphone
Power Buttons and wait for wireless headphone to establish a wireless connection
indicated by "beep-BEEP, beep-BEEP"   and display prompts.

• Menu/Tab to exit and press ENTER, or squeeze and release trigger.

• *Note:* Once Enabled or ON, Wireless remains ON and (if Speaker is not selected) the
built in speaker no longer functions. If you find your Spectra has no audio from built-in
speaker, disable Wireless. Hard wire headphones always function.

• Turning off the Spectra , automatically turns off all the wireless headphones that are in use,
BEEP-beep, BEEP-beep.

• Multi Wireless headphone use is a great way to share the hobby, as well as teach
metal detecting techniques.

Discrimination -

• Discrimination Accept / Reject – Allows custom setting accept or reject for the entire VDI (Visual Discrimination Indication) range -95(-0-)+95. This is the same range that appears on the display. Discrimination settings are built into each Program. Discrimination Accept allows customizing these original Discrimination settings. Custom settings automatically hold in memory until you either manually changed them back or Restore that Program to the original or last manually SAVED settings.

• Select VDI Accept and Press ENTER.

• Use ARROW Up & Down to view each of the 191 VDI numbers from -95-0-+95.

• "X" Box = Accept (you will hear the target)… Empty Box = Reject (you will *not* hear the target). Press Enter to change the highlighted VDI number.

• Hold ENTER and ARROW Up or Down to drag the current selection (Accept or Reject) through a range of numbers more quickly than one at a time. Saves time if large continuous changes are desired.

• To speed individual VDI number changes from the live controls a single VDI number can be changed and Saved as a default for that Program.

   • Highlight Live Control DISC.

   • ARROW UP & DOWN to find the individual VDI number you want to change and SAVE as default.

   • Press ENTER to change to the desired status. Multiple VDI numbers changes will not be SAVED, only the last one change.

   • Hold ENTER and then press MENU (new box appears).

   • ARROW to "SAVE AS DEFAULT" and press ENTER.

   • That individual VDI accept/reject change has now been added as the standard default for that program.

- This "quick save" method can be used for one specific setting change ONLY (the last one made). To Save As Default" multiple option changes from the Live Controls, after all changes are made, select Program, then hold ENTER and press MENU, select Save As Default, and press ENTER.

• Bottle Cap Reject – Adjusts how aggressively the Discrimination rejects bottle caps and other unusual alloyed iron that contains both ferrous (iron) and nonferrous (non-iron) mixes. Old Square nails for example.

- In any Discrimination search mode, Bottle Cap Reject adjusts the degree the audio breaks up (sputters) regarding iron/steel type target signals. 20 is the most aggressive (offers the greatest degree of break up on iron/steel. OFF provides the minimum degree of audio break up (least degree of sputter on iron/steel. 1-20 offers increasing degrees of audio break up. Caution must be used as in some ground types higher settings causes all target signals to break up or sputter.

• Hot Rock Reject - Adjusts the degree a signal that appears to be a ground mineral abnormality (Hot Rock at +95 VDI) is allowed to respond (beep).

- What is +95? A +95 can represent a hot rock, sometimes called a cold rock in prospecting slang). This rock/iron can be above the ground balance point, referred to as "Hot Rocks" or below the ground balance point often referred to as Cold Rocks.

  "If the mineral response is different than the ground balance point, then that particular signal response (target) is assigned the VDI # 95."

  Example:
  "If the GB point is minus 92 and the hot rock, (target or signal response) is minus 94, then that signal response is assigned VDI +95."

These conditions can influence target response beyond normal discrimination ranges, sometimes referred to as "wrap around". Hence, when mineralized ground is upwardly influencing the VDI number, it may be beneficial to accept +95. The "wrap" control found in the frequency section of the expert menu is also helpful in identifying these difficult targets.

- When OFF all VDI numbers (including + 95) are allowed to respond at their natural occurring single strength, intensity, and VDI number.
- At a setting of -10, mineral anomalies are forced to the +95 VDI indication and artificially reduced in intensity compared to all other VDI numbers.
- At a setting of 0, signals that appear to be mineral anomalies are forced to +95, and not changed in their intensity.
- At a setting of +10, signals that appear to be mineral anomalies are forced to +95, and artificially increased in their intensity. One would want to use +10 when searching for targets that indicate like a mineral anomaly (such as stony meteorites), or very deep targets in very bad ground.
- If excessive +95 Hot Rock indications distract from identifying actual metals select a more aggressive Hot Rock Reject level closer to -10.

Ground Filter -

 • Filtering out ground minerals allows deeper penetration (detection depth) in mineralized grounds and also determines the ideal search coil or loop sweep for optimum performance. Less ground filtering in low ground mineral areas increases depth, however, doesn't penetrate high mineral ground well. By adjusting ground filtering the Spectra can be optimized for the regional ground conditions and search coil sweep speed. Use ARROW Left & Right to select custom ground filtration. Lower filters (5.0 Hz Band) favor slower search coil sweep speeds. Higher frequency selections (12.5 Hz High) tend to favor faster search coil sweep speeds.

 • Modern metal detector ground filtration, because it is no longer a specific set of components that equal a specific filter, has never been well described nor understood. Modern designs are better described by their speed (Hz) rather than their quantity or cycles. The ideal setting for your ground type is the one that offers the greatest depth penetration that also works best with your personal and typical search coil sweep speed.

 • The ideal setting for your search coil sweep speed and habits may not be the best for another person in the same grounds.

 • Typically the lower number Hz are better suited for slower search coil sweep speeds. The BAND (full-range version) of each filter speed works better for lower ground mineral conditions, and higher external electrical interference. The HIGH (high pass version) is better suited to higher ground mineral conditions, and lower electrical interfference.

 • 5.0 Hz Band Pass – Slowest search coil sweeps and lowest ground mineral types.

 • 5.0 Hz High (High Pass Filtering) - Slightly higher ground mineralization.

 • 7.5 Hz Band Pass - Slow to medium search coil sweep speeds and low to medium ground mineralization.

 • 7.5 High (High Pass Filtering) - Medium to high ground mineralization.

 • 10.0 Hz Band Pass - Normal to brisker loop sweep speeds and high ground mineralization. *(Preset for most factory programs)*

 • 10.0 Hz High (High Pass Filter) - Even higher ground mineralization.

 • 12.5 Hz Band - Extreme ground mineralization with relatively quick loop sweeps.

 • 12.5 High (High Pass Filter) - Even more extreme ground mineralization.

 • A normal search coils sweep rate is 2 seconds from left to right, and two seconds returning from right to left, best suited to average ground mineralization and the 10.0 Hz settings.

Frequency (Primary) -

• Allows selection among a variety of primary frequency options.

• Three Frequencies – Allows three primary frequencies to be transmitted and received. Three Frequencies is normally the best choice for general searching.

• Salt Compensate – Selects an optimum frequency configuration to subtract wet conductive salt water for use on the saltwater beach, (hunting ocean beaches) or alkali desert regions when wet or damp.

• 2.5 kHz – Selects single frequency operation at 2.5 kHz. 2.5 kHz is ideal for hard, larger, high conductive metals, Silver / Copper.

• 7.5 kHz – Selects single frequency operation, the medium 7.5 kHz. 7.5 kHz is a good middle of the road frequency for all types of metals.

• 22.5 kHz – Selects single frequency operation at 22.5 kHz . 22.5 kHz is ideal for softer, smaller, medium to low conductive metal types, such as Gold / Nickel.
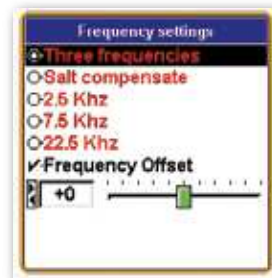
Note: Battery life will vary with single frequency selection, generally reduced battery life at 2.5 kHz notably when Tx Boost is used. Higher frequencies are more battery friendly.

• Frequency Offset – Allows a user to slightly offset the primary operating frequency or frequencies of the Spectra to avoid interference from other metal detectors operating nearby and from external electrical interference. Frequency offset doesn't significantly affect performance other than to reduce or eliminate interference from other electronics operating nearby and thus may allow higher Rx Gain settings.

• Press ARROW Left & Right to choose an offset that avoids area interference.

• If hunting near other metal detectors, offset allows near shoulder-to-shoulder search separation distances without interference between detectors.

• This feature offsets actual operating frequencies. Wireless headphones are different and have their own Channel and Power selections to avoid audio wireless headphone interference. Wireless Headphone options are detailed under AUDIO section.

Ground Tracking -

Autotrac - Selects among options controlling the automatic ground rejection feature.

• Report - When ON ("X" in box) ground adjustments (tracking) is indicated by "ARROWS" appearing on the center lower portion of the display (temporarily replacing the Program name). Tracking with arrows pointing right indicate ground balance is tracking with an increase in ground rejection levels. Arrows pointing left indicate tracking is occurring with a decrease in the ground rejection level.

• Inhibit – When ON ("X" in box) ground mineral tracking is restricted during target signals that have a high probability of being a ground mineral or hot rock. Doing so prevents errors in ground tracking caused by ground anomalies in search area. When off (empty square) ground tracking occurs regardless. ON is suggested for most types of searching. OFF is suggested for Prospecting.

• Speed – Selects the speed or aggression of Auto Tracking. Press ARROW Left & Right to select the speed of Auto Tracking. Excessive ground tracking can be as bad for performance as insufficient ground tracking. A speed that keeps up with progressive ground changes is desired. A setting that adjusts significantly when passing over slight (spotty) ground imperfections can cause instability and errors. Ideally select a speed that keeps up, yet doesn't overcompensate for every unusual rock.

• Offset – Selects a slightly + or – ground balance and tracking setting point to enhance ground rejection and target responses. Typically a "+" offset is used to reduce ground mineral responses and enhance target signal responses (particularly small size targets) in extreme ground types. More rarely "-" offset may be used to enhance the response of iron oxides in a low iron ground matrix, for example stony iron meteorites in a ground matrix consisting of ice/snow.

• Locktrac – Locks ground tracking so that the ground rejection setting remains unchanged during searching. A benefit when searching extreme ground types where a fixed ground balance can be used to reject repeat responses from mineralization.

Hold Trigger and hold ENTER then pump the search coil over a troublesome spot of ground mineralization until threshold stabilizes, lock ground tracking at that level. That type of mineral will no longer respond. Suggested only when spotty and extreme mineral responses are so common as to obscure target responses.

From any search mode, holding the Trigger on the grip and the ENTER key then pumping the search coil over the ground, performs a Manual Ground Balance. If Loctrac is selected (no ground tracking), this manual setting will remain indefinitely.

Locktrac has a Offset option of it's own, so that manual balancing can be offset + or – perfect to enhance either small targets in high mineral ground, or avoid mineral anomalies (hot rocks).

• Soil Type - Select basic soil type to dictate appropriate ground tracking range and/or limits.

   NORMAL - Typical ground free of of conductive components like wet salt
   SALT - Conductive salt, alkali, or fertilizer (silver/iron nitrate) when wet.

Information / Configure - Press MENU Twice
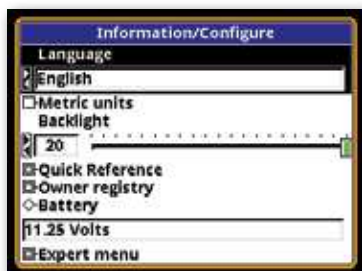
• How to Access – To access Information / Configure press MENU twice in succession. To Exit squeeze and release trigger on hand grip twice.

• Language - Select a language for the display.

ENGLISH - Americana	FRANCOIS - French
DEUTSCH - German	RUSSIAN - Russkiy Yazyk
ESPANOLA - Spanish Americana	TURKCE - Turkish

• Metric Units – Select Metric Units. Press ENTER to turn ON indicated by an "X", or OFF indicated by an empty square. When on, Metric Units are used for all measured indications. When off US Customary System is used.

• Backlight – Use ARROW Left & Right to select a backlight level. Again Spectra Backlight operates with low battery burden of 25% at maximum levels.

• Loop Selection - Select the search coil size being used for better overall depth indication.

• Quick Reference - Consult/read on-board instructions

• Owner Registration – Allows the Spectra owner to embed their name and contact information, protected from tampering, but updateable with original factory code.

• Select Owner Register and press ENTER. Press MENU / TAB to select Register and press ENTER.

- Password – IMPORTANT! (password display) Write down the password or code (inside back cover of this manual) that automatically appears and keep it in a safe place separate from your Spectra … (Password code will disappear, and must be manual re-entered, after first registration).

- If you normally keep your instruction manual at home, write it on the inside back cover of the manual. Should you ever change addresses or sell your Spectra, this code must be retained and manually re-entered to update or revise your Spectra's registration information. Password is available with proof of purchase, and proper identification.

- MENU/TAB to Owner's Name – Use the ARROWs Down / Up, and Left / Right to spell out your name. Or press ENTER to bring up a key-board and then use ARROWs and ENTER to spell out your name.

- ENTER blanks to add spaces. If you make an error, to correct that digit, squeeze and release trigger, ARROW back to that digit, and press ENTER to bring the Keyboard back, then retype that digit.

- Contact - Press MENU / TAB to exit Name and select Contact. Type out your contact information using ARROWs, or pressing Menu to bring up the keyboard then ARROWs and ENTER.

- SAVE – Use MENU / TAB to select SAVE, press ENTER to SAVE your Registration.

- Battery – Check battery voltage during searching is quick and easy, simply press MENU twice, look at voltage, squeeze and release trigger on grip twice to exit back to a search mode.

- WIRELESS HEADPHONE - Check wireless headphone battery voltage. Normal operating range 2-3 volts.

- Expert Menu - Select Expert Menu and press ENTER. Access a more elaborate, detailed, and feature-rich menu version. Includes all six-block features many with expanded options plus numerous additional advanced features. Live controls (across bottom of display) may or may not have all the expanded Expert Menu options. Live control specifics are selectable within the Expert Menu.

## Preset Program Chart *(blank Chart for your use on page 63)*

Programs	Coin&Jewelry	Salt Beach	Relic	Prospecting	Deep Silver	High Trash	Meteorite	HI Pro	Mixed Pro	Common
SENSITIVITY										
Rx Gain	7	10	8	7	12	6	10	9	9	2
TX Boost	off	off	off	off	off	off	off	off	off	off
Discrimination	75	85	85	85	90	88	85	85	85	50
All Metal	55	55	65	70	70	55	80	60	65	50
AUDIO										
Target Volume	48	50	40	40	40	40	40	53	40	40
Audio Volume	23	18	8	8	8	8	8	8	8	8
Tone										
Target Tone	200	200	215	180	200	180	180	180	180	200
Threshold Tone	195	195	128	179	128	128	128	128	50	195
Tone I.D.	on	on	off	off	on	on	off	on	on	off
Wireless HD										
Channel	4	4	4	4	4	4	4	4	4	4
Power Level	3	3	3	3	3	3	3	3	3	3
Signal Monitor	on	on	on	on	on	on	on	on	on	on
Speaker	off	off	off	off	off	off	off	off	off	off
Multiple HD	off	off	off	off	off	off	off	off	off	off
DISCRIMINATION										
Accept	-5 to +94	-5 to +94	0 to +95	-20 to +95	+65 to +95	+15 to +25 +66 to +94	-75 to 0	-20 to +95	-1 to +94	0 to +94
Bottle Cap Reject	off	off	off	off	off	10	off	off	1	off
Hot Rock	off	off	off	off	off	off	off	off	off	off
Ground Filter	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	5.0 Hz BP	10.0 Hz BP	10.0 Hz BP	5.0 Hz HP	5.0 Hz BP	10.0 Hz BP
FREQUENCY	3 Freq.	Salt Comp.	3 Freq.	22.5 kHz	2.5 kHz	3 Freq.	22.5 kHz	3 Freq.	3 Freq.	3 Freq.
GROUND TRACK										
Autotrac	on	on	on	on	on	on	on	on	on	on
Report	on	on	on	on	on	on	on	off	on	on
Inhibit	on	on	on	on	on	on	on	off	on	on
Speed	25	25	50	25	25	25	25	50	25	25
Offset	0	0	0	+1	0	0	0	0	0	0
Locktrac										
Offset	0	0	0	+1	0	0	0	0	0	0
Soil Type	normal	salt	normal	normal	normal	normal	normal	normal	normal	normal
Information										
Language	English	English	English	English	English	English	English	English	English	English
Metric Units	off	off	off	off	off	off	off	off	off	off
Backlight	20	20	20	20	20	20	20	20	20	20
Quick Reference	read	read	read	read	read	read	read	read	read	read
Owner Register	available	available	available	available	available	available	available	available	available	available
Battery	volts	volts	volts	volts	volts	volts	volts	volts	volts	volts
Wireless	volts	volts	volts	volts	volts	volts	volts	volts	volts	volts
Expert Menu	off	off	off	off	off	off	off	off	off	off

Special Library Programs Chart

| Programs	Alluvial Scan	Beep-Dig	Chestnut	Coin	Dusk	Firside	MXT	Pine	Sunshine
SENSITIVITY									
Rx Gain	7	2	2	7	2	2	5	2	2
TX Boost	off	off	off	off	off	off	off	off	off
Discrimination	85	50	50	80	50	50	90	50	50
All Metal	70	55	50	55	50	50	70	50	50
AUDIO									
Target Volume	40	40	48	48	48	48	48	48	48
Audio Volume	8	8	23	23	23	23	23	23	23
Tone									
Target Tone	180	200	200	200	200	200	178	200	200
Threshold Tone	179	128	195	195	195	195	178	195	195
Tone I.D.	off	on	off	off	off	off	off	off	off
Wireless HD	off	off	off	off	off	off	off	off	off
Channel	4	4	4	4	4	4	4	4	4
Power Level	3	3	3	3	3	3	3	3	3
Signal Monitor	on	on	on	on	on	on	on	on	on
Speaker	off	off	off	off	off	off	off	off	off
Multiple HD	off	off	off	off	off	off	off	off	off
DISCRIMINATION									
Accept	-20 to +95	-95 to +95	0 to +94	+15 to +25 +51 to +94	0 to +94	0 to +94	+17 to +95	0 to +94	0 to +94
Bottle Cap Reject	off	off	off	off	off	10	off	off	off
Hot Rock	off	off	off	off	off	off	off	off	off
Ground Filter	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP	10.0 Hz BP
FREQUENCY	22.5 kHz	3 Freq.	3 Freq.	22.5 kHz	3 Freq.	3 Freq.	22.5 kHz	3 Freq.	3 Freq.
GROUND TRACK									
Autotrac	on	on	on	on	on	on	on	on	on
Report	on	on	on	on	on	on	on	off	on
Inhibit	on	on	on	on	on	on	on	off	on
Speed	25	25	50	25	25	25	25	25.00	25
Offset	+1	0	0	+1	0	0	0	0	0
Locktrac									
Offset	+1	0	0	+1	0	0	0	0	0
Soil Type	normal	normal	normal	normal	normal	normal	normal	normal	normal
Information									
Language	English	English	English	English	English	English	English	English	English
Metric Units	off	off	off	off	off	off	off	off	off
Backlight	20	20	20	20	20	20	20	20	20
Quick Reference	read	read	read	read	read	read	read	read	read
Owner Register	available	available	available	available	available	available	available	available	available
Battery	volts	volts	volts	volts	volts	volts	volts	volts	volts
Wireless	volts	volts	volts	volts	volts	volts	volts	volts	volts
Expert Menu	off	off	off	off	off	off	off	off	off

The Displays of V3ⁱ
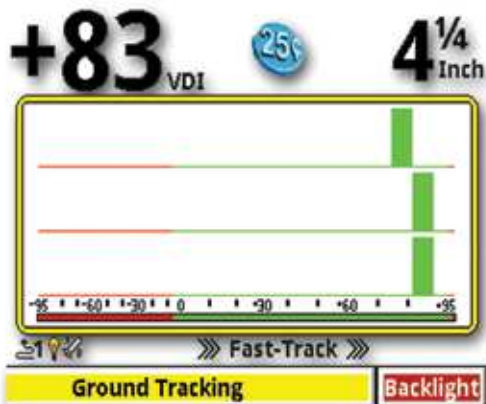
SignaGraph Screen displays the strength of the VDI response for each frequency.

Vector Analysis Screen shows the phase and strength of each frequency as the search coil is swept over the target.
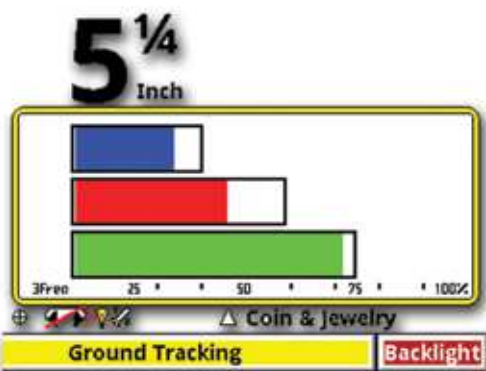
Pinpoint Screen shows the response strength for each of the 3 frequencies including the peak responses.

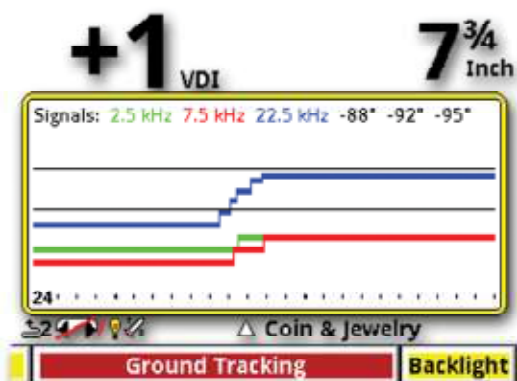Vector Analysis Screen can easily distinguish iron targets by their looping response.
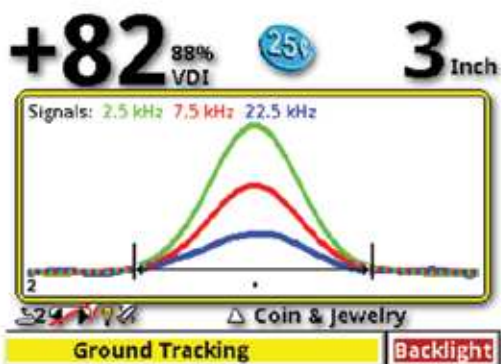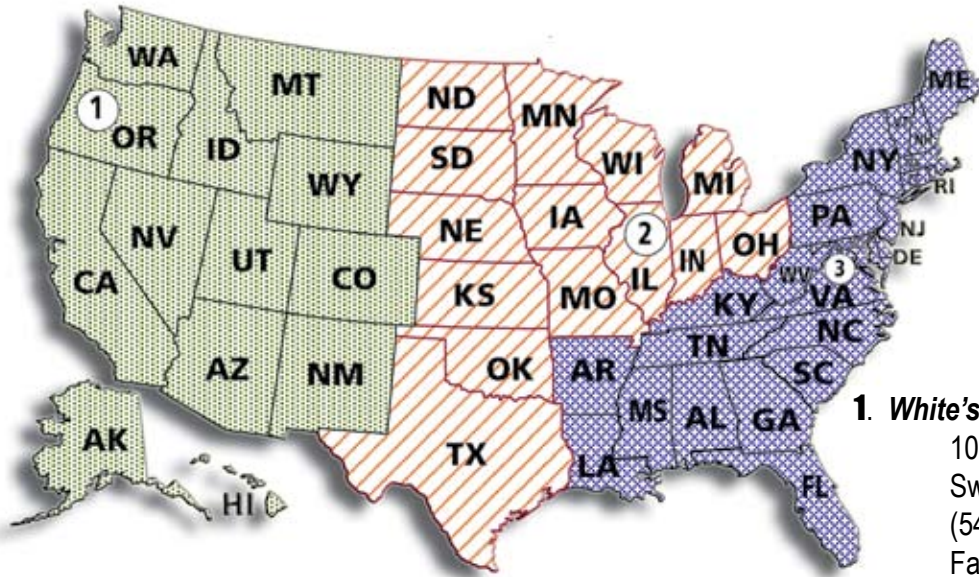

Sweep Analysis Screen shows the response strength for each frequency as the search coil sweeps over the target.

Prospecting Scan Screen displays a continuous VDI response useful for ground analysis.

USA / Australian Service Centers

1. *White's Electronics*
1011 Pleasant Valley Rd.
Sweet Home, OR 97386
(541) 367 6121
Fax (541) 367 6629
Tmarshall@whiteselectronics.com

2. *Electronic Exploration*
575 West Harrison
Lombard, IL 60148
(800) 392-3223
(630) 620-0618
(630) 620-1005 FAX
tony@ee-il.com

3. *Centreville Electronics*
10063 Wellington Rd.
Manassas, Va. 20110
(888) 645-0202
(703) 367-7999
(703) 367-0868 FAX
bob@cwrelics.com

Australia -
Gold Search Australia
Tony Mills Distributor
76 Broadway, Dunolly Vic 3472
Telephone: (+61) 03 5468 1877
Fax: (+61) 03 5468 1667
info@goldsearchaustralia.com
www.goldsearchaustralia.com

White's reputation has been built on quality products backed by quality service. Our Factory Authorized Service Centers are factory trained and equipped. They offer the same quality service as the factory. Service before and after the sale is the cornerstone of our customer relations.

a. Contact your Dealer. There may be a quick, simple fix or explanation that will prevent having to send the detector in for service.
b. Double check the obvious, such as batteries, and try the detector in another area to be sure there isn't interference.
c. Be sure to send all necessary parts with your detector, such as batteries and holders, as these items can result in symptoms.

Before shipping detectors for service -
• Always include a letter of explanation about your concerns, even if you have talked to the Service Center by telephone.
• Take care in packaging instruments for shipping. Always insure your package.

USA Limited Warranty Statement

If within two years (24 months) from the original date of purchase, your White's detector fails due to defects in either material or workmanship, White's will repair or replace at its option, all necessary parts without charge for parts or labor.

Simply return the complete detector to the Dealer where you purchased it, or to your nearest Authorized Service Center.

The unit must be accompanied by a detailed explanation of the symptoms of the failure. You must provide proof of date-of-purchase before the unit is serviced.

This is a transferable manufacturer warranty, which covers the instrument two years from the original purchase date, regardless of the owner.

Items excluded from the warranty are non-rechargeable batteries, accessories that are not standard equipment, shipping/handling costs outside the continental USA, Special Delivery costs (Air Freight, Next Day, 2nd Day, Packaging Services, etc.) and all shipping/handling costs inside the continental USA 90 days after purchase.

White's registers your purchase only if the Sales Registration Card is filled out and returned to the factory address soon after original purchase for the purpose of recording this information, and keeping you up-to-date regarding White's ongoing research & development.

The warranty does not cover damage caused by accident, misuse, neglect, alterations, modifications, unauthorized service, or prolonged exposure to corrosive compounds, including salt.

Duration of any implied warranty (e.g., merchantability and fitness for a particular purpose) shall not be longer than the stated warranty. The manufacturer nor the retailer shall be liable for any incidental or consequential damages. Some states however, do not allow the limitation on the length of implied warranties, or the exclusion of incidental or consequential damages. Therefore, the above limitations may not apply to you.

In addition, the stated warranty gives you specific legal rights, and you may have other rights, which vary from state-to-state.

The foregoing is the only warranty provided by White's as the manufacturer of your metal detector.

Any "extended warranty" period beyond two years, which may be provided by a Dealer or other third party on your detector, may be without White's authority, involvement and consent, and might not be honored by White's.

White's Electronics, Inc.
1011 Pleasant Valley Raod
Sweet Home, Oregon 97386 USA
Telephone: (541) 367-6121 • FAX 541-367-6629
Email: Tmarsahll@whiteselctronics.com
Web site: www.whiteselectronics.com

USA Warranty Transfer

If for any reason you should sell your Spectra prior to the date the warrant expires, the remaining warranty is transferable. Call 1-800-547-6911, and get an Authorization Number to authorize this transfer.

UK Warranty

The serial number which is unique to your unit is on a white label inside the battery compartment. Please quote this number on any correspondence regarding your detector.

White's Electronics has always been concerned with the absolute quality of their mineral/metal detectors. Service after the sales is of extreme importance to us and we always do our utmost to ensure that customers are satisfiied with our units.

 If your unit should require servicing or repair, simply return it to us at the factory in Inverness and we shall carry out the necessary work for you.

Any work carried out by unauthorized persons will automatically nullify the warranty.

If within two years (24 months) from the original date of purchase, your White's detector fails due to defects in either material or workmanship, White's Electronics (UK) Ltd. will repair or replace at its option, all necessary parts without charge for parts or labor.

Return the detector to our factory in Inverness, Scotland. Pleae include an detailed explanation of the faults. Items excluded from the warranty are non-rechargeable batteries and other accessories.

The warranty is not valid unless the Warranty Registration Card is returned to the factory address within 10 days of the original purchase for the purpose of recording that date, which is the actual commencement date of the warranty.

This warranty does not cover damage to the detector caused by accident, misuse, neglect, alterations, modifications or unauthorized service. Duration of any implied warranties (e.g., merchantability and fitness for a particular purpose) shall not be longer than the stated warranty.

Neither the manufacturer nor the retailer shall be liable for any incidental or consequential damages resulting from defects or failures of the instrument to perform.

This warranty does not affect your statutory legal rights.

White′s Electronics (UK) Ltd
35 Harbour Road
Inverness ~ Scotland ~ IV1 1UA
Telephone: (01463) 223456 Fax: (01463) 224048
Email: sales@whelects.demon.co.uk.
Web site: www.whites.co.uk

UK Warranty Transfer

If for any reason you should sell your Spectra prior to the date the warrant expires, the remaining warranty is transferable. Call (01463) 223456, and get an Authorization Number to authorize this transfer.

Quick Reference and Index for Expert Menu

Programs – Choose, change, store, or delete, sets of option or feature settings.

Select – Choose a Program from those already existing in the basic list.

Save – Save a custom set of options you have completed.

Restore / Load – Restore any program that has previously been SAVED.

New / Copy – Create a new program starting with an existing Program.

Rename - Change an existing Program's name.

Erase – Delete a Program.

Setup – Special features for Expert Program manipulation.

Library – Manipulate Library Programs.

Discrimination – Choose features that are used in the rejection of unwanted targets.

Visual Reject – "X" Prevents rejected VDI numbers and their associated Icons from appearing on display.

Bottle Cap Reject – (Off – 20) – Adjusts iron rejection (how aggressively iron is rejected). 20 = most aggressive iron rejection, 1 = least, off = no added iron bias.

Hot Rock – (OFF - +10) – Adjust mineral anomalies (VDI +95) cancellation or identification (hot rock) rejection. -10 = most aggressive, off = no additional hot rock bias (all VDI numbers treated equally), +10 = slight increase in +95 signal strength.

VDI Selected By – Selects different methods of adjusting trash metal rejection.

Icon Table – Select sets of Icons specific to different types of searching.

Sensitivity – Choose and/or adjust features that determine sensitivity.

Rx Gain – (1 – 15) 15 = highest. Select the Preamp level for stable performance and minimum overload indications.

Tx Boost – (On / OFF) Over-power the search coil to supercharge depth. Note; Causes rapid battery discharge and is susceptible to noise and overload.

Discrimination – (1 – 100) 100 = highest. Responsiveness (sensitivity) to metal targets when using the Discrimination mode (Motion Mode).

All Metal – (1 – 100) 100 = highest. Sensitivity of the pinpoint and all other non-discrimination (All Metal) modes & features including Mixed Mode and VCO.

Audio – Choose and/or adjust features that control the sound (audio output).

Target Volume - Select how loudly a metal target beeps depending upon the audio output method.

Audio Threshold – Independently selects the background hum (threshold level) normally heard during searching.

Tone – Adjust the pitch or tone independently among the different audio indications.

Search Audio – Select the type of audio output or mode for primary searching.

Pinpoint Audio – Select audio options specific to Pinpoint (trigger squeezed)

Wireless Headphone – Select options specific for use of the wireless headphones.

Frequency – Make operating frequency selections (transmit and receive).

Three Frequency – Choose to transmit and receive all three available primary frequencies.
Salt Compensate – Special multi-frequency salt-subtraction method for use on salt water beaches, and alkali dessert when wet .
2.5 kHz – The lowest frequency for silver / copper and other high conductive targets.
7.5 kHz – The mid range frequency for all around performance.
22.5 kHz - The highest frequency for gold / nickel and other small or low conductive targets.
Frequency Offset – -5 – 0 - +5 (0) = no offset. Slightly alter any given frequency or frequencies to avoid external interference.

Ground Tracking – Choose features beneficial in the rejection of ground mineralization.

Autotrac "r" – Automatically track changes in the ground's mineralization.
Lock Trac – "X" = no tracking.
Soil Type – Select soil types for appropriate ground tracking range.

Filter & Speed – Choose features that match the on-board filters to conditions and preferences.

Search – Selections active in the search mode, TRIGGER in center position.
Analysis - Selections active in the Analysis mode, TRIGGER forward position.

Configure – Build a custom metal detector to your specific preferences.

Language – Select English (Americana), Deutsch (German), Espanola (Spanish Americana), Francois (French), Russian (Russkiy Yazyk or Turkee (Turkish).
Metric – Changes measurements to the metric system. US Customary system is default.
Backlight - off – 20 – 20 = Brightest. Select the brightness of the backlight. High settings increase battery drain up to 25%.
Color Theme – Select from a different color combinations or make custom color selections.
Sound Effects – Selects warning, and keystroke audio indications.
Live Search Screen – Select different information appearing on the display. Includes Pinpoint and Analysis.
Live Controls – Select features for the Live Control, options across the bottom of the display.
Menu – Select options for the Menu.
Loop Selection – Select the search coil size being used for better overall depth indications.
Battery – Select battery options.

Information – Significant data or information.

Quick Reference – On board instructions.
Owner Registry – Read or embed owner information in the software.
Battery - Current battery voltage.

Expert Menu

PROGRAMS *– Choose, change, store, or delete sets of option or feature settings (Programs) for ongoing use or non-use.*

⊙ *or "X" indicates selected or on. Empty box indicates not selected or off. ENTER activates, selects, or changes. Arrows adjust or select. MENU/TAB moves to new adjustment section.*

PROGRAM MENU CHOICES -

Select – Choose a Program (complete set of options or feature selections) from those already existing in the basic list.

Save – Save a custom set of options or feature selections you have completed.
Use up and down keys to select a program, MENU/TAB to SAVE, press ENTER.

Restore / Load – Restore any program that has previously been SAVED.
Name – Use up and down keys to select a program from the basic list and restore its original settings.
MENU/TAB to From - Select a program not on basic list.
Saved Copy – Return a program to the last manually saved settings.
Library Programs – Replace a program on the basic list with the copy of the original that is in the Library.
Loaded Programs – Replace a program's entire selections with those from another program.

New / Copy – Create a new program starting with an existing Program.
Start with a copy of a program from the Library.
Use the same name as the original Library program.
Loaded Program – Start with the settings from a program from the basic list.
MENU/TAB to Name to enter a new name for the new program.
ENTER – Press ENTER, use arrow keys and ENTER to spell out a new name.
Create – MENU/TAB to Create, press ENTER to create the new program.

Rename - Change an existing Program's name.
Use up and down keys to select the program you want to rename.
MENU/TAB to New Name, press ENTER, use arrow keys and ENTER to spell out a new name.
MENU/TAB to Rename press Enter.

Erase – Delete a Program.
Programs – Select a program from the basic list to remove/delete.
Erase – MENU/TAB to Erase, ENTER to erase.

Setup – Special features for Expert Program manipulation.

       Excludes – Apply chosen categories of selections stored in COMMON to any Program.

       Comment – Apply a personal custom comment to any Program.

              Program - Choose a program to add a comment.

              Comment – MENU/TAB to Comment, press ENTER, use arrow and ENTER keys to spell out the comment.

                    Exit – MENU/TAB to Exit, press ENTER to exit.

Library – Manipulate Library Programs.

       Store – Store a new Program in the Library or replace an existing Library Program.

       Rename – Change the name of an existing Library Program.

       Erase – Delete a custom Library Program. Factory standard Library Programs cannot be deleted.

DISCRIMINATION – Choose features that are used in the rejection of unwanted trash metals.

Visual Reject – "X" Prevents rejected VDI numbers and their associated Icons from appearing on display during searching.

Bottle Cap Reject – (Off – 20) – Adjusts iron rejection (how aggressively iron is rejected). 20 = most aggressive iron rejection, 1 = least, off = no added iron bias.

Hot Rock – (OFF - +10) – Adjust mineral anomalies (VDI +95) cancellation or identification (hot rock) rejection. -10 = most aggressive, off = no additional hot rock bias (all VDI numbers treated equally), +10 = slight increase in +95 signal strength.

VDI Selected By – Selects different methods of adjusting trash metal rejection.

       Level – Provides a linear adjustment much like a control knob, below selection rejects, above accepts.

       Reject Level – Set the VDI numbers that "at" and <less than> are rejected.

       Icon – Select trash rejection using the icons and their selected VDI ranges.

       Edit – Press ENTER, "X" box = accepted. Empty box = rejected. Use arrow up and down and ENTER to accept or reject by Icon ranges. Note, each Icon's VDI ranges can be adjusted under Icon Table, Custom/Edit.

       V.D.I. – Select trash rejection by specific VDI number.

       Edit – Press ENTER, "X" box = accepted. Empty box = rejected. Use arrow up and down and ENTER to accept or reject by VDI number. Hold ENTER + ARROW to drag accept thru large range changes.

       Graph – Select trash rejection using a graph and VDI number reference.

       Edit – Press Enter, use arrow left and right to see VDI number range and graph. At any given VDI number arrow up accepts, arrow down rejects, shown on graph.

Icon Table – Select sets of Icons specific to different types of searching.

       Park – Icon set typical for parks and general coin shooting, common coins, jewelry, and trash.

       Relic – Icon set suitable for historic areas, bullets, buckles, and iron.

       Prospecting – Icon set suitable for gold prospecting, nuggets, hot rocks, iron.

Custom –Select and adjust specific Icons and the VDI range for each Icon, and/or create custom word icons and select their VDI ranges.

    Edit – Press ENTER, use arrow up and down to view Icons and their listed VDI ranges.

        VDI Range – Press Enter.

            First VDI - Use arrow left & Right to select the first (lowest) VDI number to indicate that Icon.

            Last VDI – Use arrow left & right to select the last (highest) VDI number to indicate that Icon.

First Icon, Second Icon - Re-arrange Icons positions from first to last.

Delete Entry – Delete the selected range or last entry.

Entire Table – Clear, restore, or load an entire Icon table.

SENSITIVITY – *Choose and/or adjust features that determine sensitivity or responsiveness.*

Rx Gain – (1 – 15)   15 = highest. Select the Preamp level for stable performance and little to no ground related overload indications.

Tx Boost – (On / OFF) Over-power the search coil to supercharge depth. Note; Causes rapid battery discharge and is susceptible to noise & overload. Recommended for very low mineralized grounds. Also recommended for high external electrical (EMI)   interference, (Tx Boost ON, reduce Rx Gain, Discrimina tion, and All Metal sensitivity as necessary to regain stable performance).

Discrimination – (1 – 100)   100 = highest. Responsiveness (sensitivity) to metal targets when using the Discrimination (trash rejection) mode, often described as "Motion Mode" due to the fact the search coil must be kept in motion for metal to respond.

All Metal – (1 – 100)   100 = highest. Responsiveness (sensitivity), of the pinpoint and all other non-discrimination (All Metal) modes & features (Mixed Mode, Stereo Mixed Mode). Also changes perfor mance characteristics of the VCO feature.

AUDIO– *Choose and/or adjust features that control the sound (audio output).*

Ranges vary depending upon option selections (Threshold VS Volume limitation).

Target Volume - Select how loudly a metal target beeps differently depending upon the audio output method.

    Speaker - How loudly a metal target beeps when sounded by the built in speaker.

    Plug-in Headphone – How loudly a metal target beeps when sounded by a wire plug in headphone,

    Wireless Headphone - How loudly a metal target beeps when sounded by wireless headphones.

    Balance – Adjust the left / right ear volume when using stereo headphones.

Audio Threshold – Independently selects the background hum (threshold level) normally heard during searching.

    Speaker - Threshold level heard from built in speaker.

    Plug-in Headphone – Threshold level heard from wire plug in headphones.

    Wireless Headphone – Threshold level heard from wireless headphones.

    Balance – Adjust left / right ear threshold level when using stereo headphones.

Tone – Adjust the pitch or tone independently among the different audio indications.

        Fixed Threshold – Select the pitch of the non-VCO.

        VCO Threshold – Select the beginning pitch of the VCO threshold.

        Target tone – Select the pitch a metal target produces when Tone ID is not used.

        Overload tone – Select the pitch of the overload indication so it is recognizable compared to other indications.

        VDI Tones – Select different types of audio tone ID for when Tone ID is ON.. Likely targets or target ranges identified by pitch. The selection at this point in the Menu dictates the type of Tone ID activated in other Tone ID on/off choices. In other words if you choose Standard here, ongoing on/off Tone ID choices later in the menu will activate the standard version of Tone ID.

                Standard – Progressively higher pitched beeps for targets progressively higher on the VDI scale, +95 the highest.

                Shifted – Iron / negative VDI numbers are all the same tone. Starting at the selected reference tone, VDI numbers above 0 are progressively pitched.

                        Negative Tone (VDI <0) – Select one pitch for ALL negative VDI numbers.

                        Reference Tone (VDI = 0) – Select a reference pitch for VDI = 0, (+) VDI numbers are shift higher.

                Custom – Manually select custom pitches for each VDI number or the same pitch for a range of VDI numbers.

                        VDI Tones - Arrow up & down to see each VDI number and it's pitch. Arrow left and right to select pitch.

Search Audio – Select the type of audio output or mode for primary searching.

        Discrimination – Provides audio (beep) trash metal rejection, requires search coil movement to detect.

                Threshold – "X" = background hum (threshold), or empty box = silent search (no threshold).

                Tone Id – "X" = pitch difference depending upon VDI number and the VDI Tone method previously selected under AUDIO, TONE, VDI TONE. Empty box = no different tones or pitches for different VDI numbers.

                Modulation – "X" = on, empty box = off. Selects the depth of the metal targets influence over the target's audio beep volume.

                        Range – Higher numbers = more Modulation / deeper targets produce quieter responses.

        All Metal – Provides for an audio (beep) response to all metal types. Search coil motion is not critical depending on SAT feature.

                VCO – Produces a varied pitch based on target depth and/or position in relationship to the search coil.

        Mixed mode - Combines Discrimination (when search coil is in motion) and All Metal (when search coil is stationary or moved slowly).

                Tone Id – Selects on/off Tone ID feature for Discrimination portion of Mixed Mode. Specific Tone ID method previously selected under AUDIO, TONE, VDI TONE.

                Modulation –Selects the depth of the metal targets influence over the audio beep volume for the Discrimination portion of the mixed Mode..

                        Range – Higher numbers = more Modulation / deeper targets produce quieter responses.

VCO – Produces a varied pitch based on target depth and/or position in relationship to the search coil.

Stereo Mixed – All metal Audio in one ear, Discrimination audio in the other.

Threshold – Background hum or Threshold for Stereo Mixed Mode.

Tone ID – Selects on/off Tone ID feature for Discrimination portion of Stereo Mixed Mode. Specific Tone ID method previously selected under AUDIO, TONE, VDI TONE

Modulation - Selects the depth of the metal targets influence over the audio beep volume.

Range – Higher numbers = more Modulation / deeper targets produce quieter responses.

VCO - Produces a varied pitch based on target depth and/or position in relationship to the search coil, for the All Metal portion of the Stereo Mixed Mode.

Balance – Decide which ear you want All Metal, and which you want Discrimination.

All Metal / Disc – All Metal in left ear, Discrimination in right ear.

Disc / All Metal – Discrimination audio in left ear, All Metal audio in right ear.

Audio Boost – Boost the audio levels of Stereo Mixed mode; compensates for splitting the audio into two channels, left and right ear.

Pinpoint Audio – Select audio options specific to the Pinpoint (trigger on grip squeezed and held) mode.

VCO - Produces a varied pitch based on target depth and/or target position in relationship to the search coil.

Ratchet - Automatically reduces the size of the target signal (to a limit) for Semi-automated pinpointing.

Wireless Headphone – Select options specific for use of the wireless headphones.

Enable –Activate wireless headphone transmission.

Channel - 4 – 79 – Select a channel free of external electrical interference, must reconnect after ever channel change.

Power Level - 1 – 3   3 = Most powerful. Select a level strong enough to receive good quality sound.

Single (Monitor Battery) – Activate the ability to monitor the condition of the wireless headphone battery.

Version – Manually check wireless headphone battery condition and Wireless Headphone software version.

Speaker – Automatically switch to built in speaker if communications with wireless headphone become poor.

Multiple Headphone – Connect multiple wireless headphones to listen to one metal detector. Does not report battery conditions.

Connect / Exit – Menu Tab to connect, press ENTER, wait for display prompt, to activate and connect under a new Wireless channel, or simple exit without change.
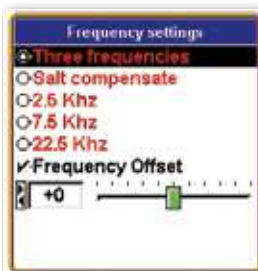
FREQUENCY – Make selections that dictate operating frequency (metal detection transmitting and receiving).

Three Frequency – Choose to transmit and receive all three available primary frequencies.

VDI –Select different methods of processing target information reported on the display when three frequencies are used.

Best Data – Compare all three frequencies and then use the target information from the frequency that appears to be the most reliable.

Correlate – Compare all three frequencies and look for predictable differences, disregarding or rejecting targets without reasonable similarities expected of good quality metals.
Span Limit - 0 – Off – Select how different in VDI numbers a target can be among the three frequencies and still be considered a good or valued metal.
Wrap Limit - Off - <-90> - In bad ground good targets sometimes exceed the + VDI scale reappearing in the <-> 90 VDI range at one or more frequencies. Wrap Limit allows selection of how far beyond +95 a frequency can indicate and still be considered a reasonably good correlation / accepted target.

Salt Compensate – Employs a special multi-frequency salt subtraction method for use on salt water beaches, alkali dessert   regions when wet, and highly fertilized (silver & iron nitrate) farm fields when wet.
VDI –Select different methods of processing target information reported on the display when Salt Compensate is used.

Best Data – Compare all three frequencies and then use the target information from the frequency that appears to be the most reliable.
Correlate – Compare all three frequencies and look for predictable differences, disregarding or rejecting targets without the predictable variables expected of good quality metals.
Span Limit - 0 – Off – Select how different in VDI number a target can be among the three frequencies and still be considered a good or valued metal.
Wrap Limit - Off - <-90> - In bad ground good targets sometimes exceed the + VDI scale reappearing in the <-> 90 VDI range at one or more frequencies. Wrap Limit allows selection of how far beyond +95 a frequency can indicate and still be considered a reasonably good correlation / accepted target.

2.5 kHz – Choose the 2.5 kHz frequency for silver / copper and other high conducting targets.
Normalized – Automatically convert raw VDI numbers at 2.5 kHz to the traditional VDI scale.
7.5 kHz – Choose the 7.5 kHz frequency for all around performance.
Normalized – Automatically convert raw VDI numbers at 7.5 kHz to the traditional VDI scale.
22.5 kHz - Choose the 22.5 kHz frequency for gold / nickel and other small or low conducting targets.
Normalized –Automatically convert raw VDI numbers at 22.5 kHz to the traditional VDI scale.
Frequency Offset – -5 – 0 - +5 (0) = no offset. Slightly alter any given frequency or frequencies to avoid external interference.

GROUND TRACKING – *Choose features that are beneficial in the rejection of ground mineralization.*

Autotrac "r" – Automatically track changes in the ground's mineralization.
Report – Display status line indicates when tracking occurs, (>>>) = increasing, (<<<) = decreasing.
Inhibit –Stops tracking when loop is over a possible target signal, best for metal types that corrode or oxidize (iron, nickel, lead, brass, copper, silver).
Speed - 1 – 100 – How quickly tracking responds to changes in the ground.
Offset - -100 to +100 – Slightly offsets perfect balance tracking + (overbalanced) or – (under balanced) to enhance specific performance desires. "+" Enhances small target sensitivity in bad ground and reduces hot rock responses. "-" Enhances response of iron oxides in low iron ground matrix, for example stony iron meteorites in a ground matrix consisting of ice/snow.
Lock Trac – "X" = no tracking. Trac Lock or not, holding TRIGGER and ENTER pump search coil over ground, will always manually ground balance.

Offset - <-100> - +100 – Slightly offsets perfect manual ground balance + or – to enhance specific performance desires.

Soil Type – Select soil type to dictate appropriate ground tracking range and/or limits.

Normal – Typical ground without significant conductive components.

Salt – Conductive (salt) ground types, wet saltwater beaches, heavily fertilized farm fields (silver/iron nitrates) when wet, alkali desert regions when wet.

FILTER & SPEED – *Choose features that match the detector's circuitry to the conditions and personal preferences.*

Search – Selections active in the search mode, TRIGGER on grip in center position.

Ground Filter - Electronic filtering optimizes penetration / detection depth. Less filtering increase detection depth in low ground mineral areas, however, doesn't penetrate high ground mineralization well. Greater degrees of filtering increase detection depth in high ground mineralization, however, doesn't penetrate low ground mineralization well. Spectra V3 offers eight combinations of digital filters. Four different filter frequencies each with a significantly different Band and a High Pass version.

Filter speed HZ – defines the speed of the filter process.

Lower numbers – 5 Hz and 7.5 Hz allow the filter to process more signals at slower search coil sweep speeds.

Higher Numbers – 10.0 Hz and 12.5 Hz, process signals at a faster rate allowing for faster search coil sweep speeds.

Filter Types,

Band Pass- Typically superior for mild (low mineral) ground types and rejection of external electrical noise / interference. Uses a narrow range of filtration.

High Pass – A faster filter with a broader range of acceptance.

Most Programs use a 10 Band Pass Filter allowing normal ground rejection at normal sweep speeds. Selecting a filter other than 10 Hz Band Pass allows adaptation to personal search coil sweep speeds and localized ground conditions.

5.0 Hz Band Pass – Better noise rejection, (Very low ground minerals), very slow search coil sweep speeds.

5.0 Hz High Pass - A little more sensitive in areas free of external electrical interference.

7.5 Hz Band Pass - Better noise rejection, (Low ground mineralization), slow sweep speed.

7.5 Hz High Pass – A little more sensitive in areas free of external electrical interference.

10.0 Hz Band Pass – Better noise rejection, (Medium ground mineralization), medium sweep speed.

10.0 Hz High Pass – A little more sensitive in areas free of external electrical interference.

12.5 Hz Band Pass - Better noise rejection, (High Ground Mineralization), fast sweep speeds.

12.5 Hz High Pass – A little more sensitive in areas free of external electrical interference.

Recovery Delay - 1 – 200   200 = slowest. Additional and separate (beyond filtration) selection for the signal response time. Short response time benefits performance in high trash by providing better target separation. A longer response time allows a larger window to detect deeper targets. Ideal Recovery Delay is dependent on Ground Filter selection, ground mineralization, trash density, and your average sweep speed (how quickly you move the search coil).

SAT (Self Adjusting Threshold) - Off – 40   40 = fastest - Adjusts the speed at which the threshold is automatically maintained during searching. Used to stabilize All Metal modes. Higher numbers are quick to correct threshold variations, however, require quicker search coil sweep speeds to maintain metal detection in the All Metal mode. The ideal setting is one that maintains a steady threshold considering your average search coil sweep speed and ground conditions yet continues to detect metal targets at your slowest search coil sweep.
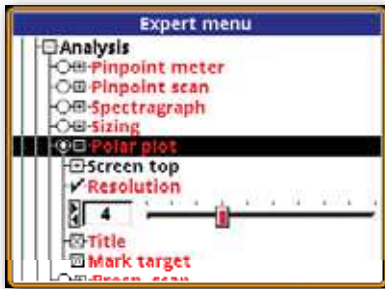
Analysis - Selections active in the Analysis mode, TRIGGER on grip forward position.

Match Search – Use same settings selected for the Search mode.
Not Match Search – Use settings different than the Search mode.
Ground Filter - Electronic filtering optimizes penetration/ detection depth. Less filtering increases detection depth in low ground mineral areas, however, doesn't penetrate high ground mineralization well. Greater degrees of filtering increase detection depth in high ground mineralization, however, doesn't penetrate low ground mineralization well Spectra V3 offers eight combinations of digital filters. Four different filter frequencies each with a significantly different Band and a High Pass version.

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CONFIGURE – Build a custom metal detector to your specific preferences.

Language – Select the language you prefer.
> English – Americana
> François - French
> Deutsch - German
> Russian – Russkiy Yazyk
> Espanola – Spanish Americana
> Turkce - Turkish

Metric – Changes all measurements to the metric system. US Customary system is default.

Backlight - off – 20 – 20 = Brightest. Select the backlight setting. Brightest setting increases battery drain up to 25%.

Color Theme – Select from a number of different color combinations, or make custom color selections.
> Setup Custom – Activates custom color selections throughout the Menu System.
> Custom – After selecting custom colors in "Setup Custom", Custom automatically contains those settings as a group that can be activated from any Program. Custom contains the total choices made in Setup Custom and they can be applied to any Program.
> Chestnut – Dramatic search screen color tones with warm menu colors.
> Dusk – Pastel search screen color contrasts with basic menu colors.
> Fireside – Dramatic and hot color tones both search screen and menu.
> Hi-Pro – High contrasts bright colors.
> Mixed Mode Pro – Dramatic hot colors, somewhat a photo negative of Hi-Pro.
> Pine – Green on dark contrasts.
> Sunshine – Pastel search screen with basic high contrast menu colors.

Sound Effects – Selects warning, and keystroke audio indications.
> Volume – How loud a warning or keystroke indication beeps.
>> Speaker - 0 – 69 – Warning or keystroke indication when sounding thru built in speaker.
>> Plug In Headphone - 0 – 69 – Warning or key stroke indication when sounding thru wire plug in headphone.
>> Wireless Headphone - 0 – 69 – Warning or key stroke when sounding thru wireless headphone.

Key Click – Pressing a control can be indicated by a click or beep. Adjust to preference.

Tone - 59 – 255 – Select the pitch of the key click.

Balance - <-100> - +100 – Balance the key click between left and right head phone speaker.

Key Limits – When a control reaches the end of it's available range. If wrap is not selected, a warning beep indicates no further adjustment range available. Adjust the pitch of this warning separately.

Tone – Select the pitch of the key limit indication.

Stereo – Select stereo or mono sound for key limits. Stereo = left ear warnings only. Mono = both ears for warnings key limits (selection at end of it's range).

Live Search Screen – Select different information to present on the display, search screen (TRIGGER center), screen (TRIGGER pulled and held), and Analysis screen (TRIGGER forward).

Pinpoint (TRIGGER squeezed and held)

Meter - Graph showing depth or intensity

Screen Top – Show these features on the display.

Depth- Choose a format for the depth indication.

Format – Available formats.

Integer - Choose whole numbers for depth indication.

Decimal - Choose numbers with decimal for depth indication.

Fraction – Choose number with fraction for depth indication.

Size – select the size of the depth indication.

(Small, medium, large, or X-large)

Depth – Graph shows target depth.

Signal – Graph shows signal intensity,

Fade Rate - 0 – Off – Rate the depth fades when a metal is no longer near search coil.

Rule – Show a reference scale at the bottom of depth graph.

Scan – Scrolling graph of target depth over time.

Screen Top – Show depth at top of display.

Depth – Select format for depth indication.

Format – Available formats

Integer - Choose whole numbers.

Decimal - Choose numbers with decimals.

Fraction – Choose number with fractions.

Size – Choose size of the depth indication

(Small, medium, large, or X-large)

Depth – Show depth graphic over time.

Signal – Scrolling graph shows signal intensity.

Scroll Rate - 16 – 30 – Adjust scrolling graph speed / resolution.

Rule – Show a reference scale at the bottom of the graph.

Title – Label frequencies shown on display.

Search – Select features for the search mode, Trigger center position.

Spectragraph – Select features for the Spectragraph.

Screen Top – Show these features on the display.

VDI – Show VDI number above graphic box.

Size – Select the size of the VDI number.
(Small, medium, large, or X-large)
Icons – Show an appropriate Icon for each VDI number.
Size – Select the size of the Icon.
(Small, medium, large, or X-large)
Depth - Show a depth indication during searching.
Format – Choose a format for the depth indication during searching.
Integer - Choose whole numbers.
Decimal - Choose numbers with decimal.
Fraction – Choose numbers with fraction.
Size – Choose a size for the depth indication.
(Small, medium, large, or X-large)
Consistency – Spectragraph shows consistency of VDI number.
Max - 1 – 50 – Adjust the Spectragraph height (number of specific VDI indications to generate the maximum size of the bar.
Intensity – Show the intensity of each VDI number indication.
Base Threshold - 0 – 90 – Bottom of graph is this % of the strongest signal.
Single Sweep – Every search coil sweep presents new Spectragraph data.
Fade – Fade older Spectragraph information.
Fade Rate – How quickly Spectragraph information fades.
Resolution – Number of VDI numbers to each Spectragraph bar, larger numbers for bigger / wider bars.
Compressed – Reduce the width of bars for VDI numbers less than 0 (Iron range).
Rule – Show a reference bar below Spectragraph.
Disc Bar – Show Discrimination accept / reject at bottom of Spectragaph.
Size – Select the size of the accept / reject bar at bottom of Spectragraph.
(Small, medium, large, or X-large)
Multigraph – When in multi-frequency, Show three Spectragraphs, one for each frequency.
Color By – Color Spectragraph by;
Icon Ranges – Spectragraph colors based on Icon ranges.
Accept / Reject – Spectragraph colors based on Accept / Reject settings.
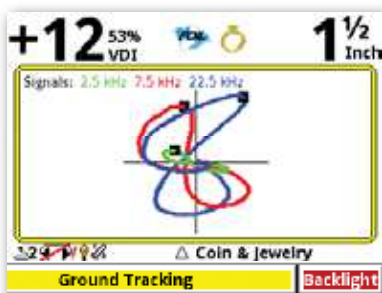Sizing – Choose sizing option.
Screen Top –Show these features on the display.
VDI – Show VDI number above graphic box.
Confidence – Show a confidence % level with the VDI number.
Size – Choose the size of the VDI number.
(Small, medium, large, or X-large)
Icons – Show Icons after VDI.
Size – Choose the size of the Icons.
(Small, medium, large, or X-large) S

Depth – Show depth indication during searching.
    Format – Choose a format for the depth indication.
        Integer - Choose whole numbers.
        Decimal - Choose numbers with decimals.
        Fraction – Choose number with fractions.
    Size – Choose a size for the depth indication.
        (Small, medium, large, or X-large)
Depth – Show depth graphic over time.
Signal – Shows signal intensity/strength over time
Rate - 1 – 10 – Adjust sizing graph
Rule – Show reference scale with sizing graph.
    Sweep Speed - 4 In/s – 40 In/s – Adjust sizing reference scale to match search coil sweep speed.
Title - Label frequencies on display.
Mark Target – Show target size marks on sizing graph.

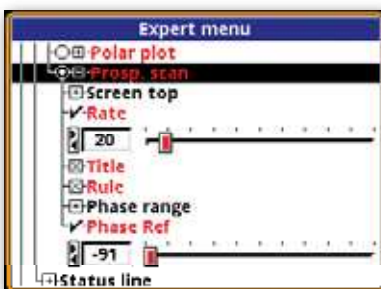**Polar Plot** – Quadrant view of the target's phase. Not normalized for individual frequencies.
Screen Top – Show these indications on Polar Plot display.
    VDI – Show VDI on Polar Plot display.
        Confidence – Show % confidence level with VDI number.
        Size – Select the size of VDI number.
            (Small, medium, large, or X-large)
    Icons – Show Icon on Polar Plot display.
        Size – Select size of Icon.
            (Small, medium, large, or X-large)
    Depth – Show depth on Polar Plot display.
        Format – Choose a format for depth on Polar Plot display.
            Integer - Choose whole numbers.
            Decimal - Choose numbers with decimals.
            Fraction – Choose number with fractions.
        Size – Choose a size for depth on Polar Plot display.
            (Small, medium, large, or X-large)
Resolution - 1 – 10 – Select the data sample rate of the Polar Plot display.
Title – Label frequencies on Polar Plot display.
Mark Target – Show a mark for the beginning of the target on Polar Plot.

Prospecting Scan – Monitor degree of the ground mineralization during searching.
Screen Top – Select features to show on Prospecting scan display.
    VDI – Show target's VDI number on Prospecting scan display.
        Size –Select size of VDI number.
        (Small, medium, large, or X-large)
    Icons – Show target's Icon on Prospecting Scan display.
        Size – Select size of Icon on Prospecting Scan display.
            (Small, medium, large, or X-large)

Typical Poor Quality Alloy

Typical Good Quality Alloy

A word about Prospecting Scan ...

Prospecting Scan provides a scrolling graph making ground changes obvious.
By monitoring these changes, increasing ground mineraliza-tion can be easily located.
*Increased ground minerals are more likely to contain precious metals (like gold).*

Depth – Show target's depth on Prospecting Scan Display.
    Format – Select a format for the depth on Prospecting Scan Display.
        Integer - Choose whole numbers.
        Decimal - Choose numbers with decimals.
        Fraction – Choose numbers with fractions.
Size – Select a size for Depth on Prospecting Scan display.
    (Small, medium, large, or X-large)
Rate - 16 – 60 – Select speed or rate of the Prospecting Scan data.
Title – Label frequencies on Prospecting Scan display.
Rule – Show reference scale with Prospecting Scan display.
Phase Range – Adjust the phase data range.
    Top - -93 – +95 – Select the phase at the top of the graph.
    Mid - -94 – +94 – Select the phase in the center of the graph
    Low - -95– +95 – Select the phase at the bottom of the graph.
Phase Ref - Off – -95 - +95– Adjust Curser line that is used to reference phase.

Analysis – Select options for the Analysis (TRIGGER FORWARD) mode.
    Pinpoint Meter – Select to show horizontal bar graph showing depth or intensity.
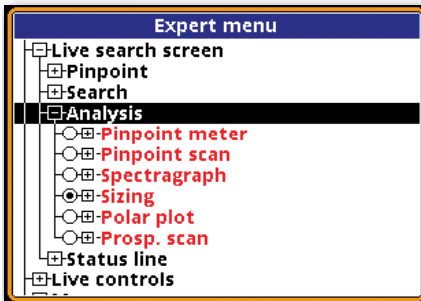
Screen Top – Show these features on the pinpoint meter.
    Depth – Show depth indication.
        Format – Select a format for the depth on Prospecting Scan Display.
            Integer - Choose whole numbers.
            Decimal - Choose numbers with decimals.
            Fraction – Choose numbers with fractions.
    Size – Select a size for Depth on Prospecting Scan display. (Small, medium, large, or X-large)
Depth – Show depth signal on graph.
Signal – Show target intensity on graph.
Fade Rate – 0 – off. How quickly depth graph fades when target no longer detected.
Rule - Show a reference scale with depth or intensity graph.

Pinpoint Scan – Select to show scrolling graph that indicates depth or signal intensity over time.
    Screen Top – Show these features on the pinpoint meter.
        Depth – Show depth indication.
            Format – Select a format for the depth on Prospecting Scan Display.
                Integer - Choose whole numbers.
                Decimal - Choose numbers with decimals.
                Fraction – Choose numbers with fractions.
        Size – Select a size for Depth on Prospecting Scan display.
            (Small, medium, large, or X-large)
Depth – Show depth signal on graph.
Signal – Show target intensity on graph.

Fade Rate – 0 – off. How quickly depth graph fades or resets when target no longer detected.

Rule - Show a reference scale with depth or intensity graph.

Title - Label frequencies on the display.

Spectragraph – Select to show Spectragraph for Analyze display.

> Screen Top – Show these features on the Spectragraph Analyze display.
>> VDI – Show VDI number above graphic box.
>>> Size – Select the size of the VDI number.
>>>> (Small, medium, large, or X-large)
>> Icons – Show an appropriate Icon for each VDI number.
>>> Size – Select the size of the Icon.
>>>> (Small, medium, large, or X-large)
>> Depth- Show a depth indication during searching.
>>> Format – Choose a format for the depth indication during searching.
>>>> Integer - Choose whole numbers.
>>>> Decimal - Choose numbers with decimals.
>>>> Fraction – Choose numbers with fractions.
>>> Size – Choose a size for the depth indication
>>>> (Small, medium, large, or X-large)
> Consistency – Spectragraph shows accumulated consistency of each VDI number indication.
>> Max - 1 – 50 – Adjust Spectragraph height according to how many times that specific VDI indication occurs.
> Intensity – Show the intensity of each VDI number indication.
>> Base Threshold - 0 – 90 – Adjust bottom of graph (beginning of information) to this % of the strongest possible signal.
> Single Sweep – Every search coil sweep presents new Spectragraph data.
>> Fade – Fade older Spectragraph information.
>>> Fade Rate – How quickly Spectragraph information fades. Higher numbers fade quicker.
> Resolution – Number of VDI numbers to each Spectragraph bar, larger numbers select fewer but bigger / wider Spectragraph bars.
> Compressed – Reduce the Spectragraph bars for of VDI numbers less than 0 (Iron range).
> Rule – Show a reference bar below Spectragraph.
> Disc Bar – Show Discrimination accept / reject at bottom of Spectragraph.
>> Size – Select the size of the accept / reject bar at bottom of Spectragraph.
>>> (Small, medium, large, or X-large)
> Multigraph – When in multi-frequency, "X" shows three Spectragraphs, one for each frequency. Empty box = one Spectragraph for all frequencies combined.
> Color By – Color Spectragraph by;
>> Icon Ranges – Spectragraph colors based on Icon ranges.
>> Accept / Reject – Spectragraph colors based on Accept / Reject settings.
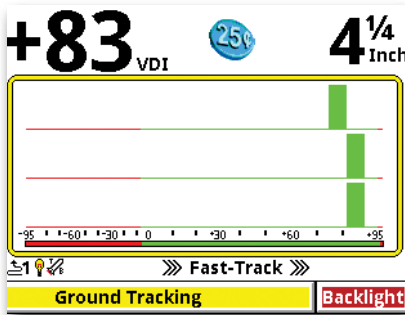
SIZING DISPLAY

Sizing – Choose sizing options for the display.
  Screen Top –Select features to show on the sizing display.
    VDI – Show VDI number above graphic box.
      Confidence – Show a confidence % level with the VDI number.
      Size – Choose the size of the VDI number.
      (Small, medium, large, or X-large)
    Icons – Show Icons after VDI.
    Size – Choose the size of the Icons.
      (Small, medium, large, or X-large)
  Depth – Show depth indication during searching.
    Format – Choose a format for the depth indication.
      Integer - Choose whole numbers .
      Decimal - Choose numbers with decimals
      Fraction – Choose number with fraction for depth indication.
    Size – Choose a size for the depth indication during searching.
      (Small, medium, large, or X-large)
  Depth – Show depth graphic over time.
  Signal – Show signal intensity/strength over time
  Rate - 1 – 10 – Adjust sizing graph resolution.
  Rule – Show reference scale with sizing graph.
    Sweep Speed - 4 In/s – 40 In/s – Adjust sizing reference scale to match search coil sweep speed. 4In/s = 4 inches per second, 40 In/s = 40 inches per second.
  Title - Label frequencies on display.
  Mark Target – Show target size marks on sizing graph.
Polar Plot – Quadrant view of the target's phase.
  Screen Top –Select features to show on the Polar Plot display.
    VDI – Show VDI on Polar Plot display.
      Size – Select the size of VDI number to show on Polar Plot display.
        (Small, medium, large, or X-large)
    Icons – Show Icon on Polar Plot display.
      Size – Select size of Icon.
        (Small, medium, large, or X-large)
    Depth – Show depth on Polar Plot display.
      Format – Choose a format for depth on Polar Plot display.
        Integer - Choose whole numbers .
        Decimal - Choose numbers with decimals.
        Fraction – Choose numbers with fractions.
      Size – Choose a size for depth on Polar Plot display.
        (Small, medium, large, or X-large)
  Resolution - 1 – 10 – Select the data sample rate (resolution) of the Polar Plot display.
  Title – Label frequencies on Polar Plot display.
  Mark Target – Show a mark for the target at it's strongest signal point.

Prospecting Scan – Monitor degree of the ground mineralization during searching.
> Screen Top – Select features to show on Prospecting scan display.
>> VDI – Show target's VDI number on Prospecting scan display.
>>> Size –Select size of VDI number.
>>>> (Small, medium, large, or X-large)
>> Icons – Show target's Icon on Prospecting Scan diplay.
>>> Size – Select size of Icon on Prospecting Scan display.
>>>> (Small, medium, large, or X-large)
>> Depth – Show target's depth on Prospecting Scan Display.
>>> Format – Select a format for the depth on Prospecting Scan Display.
>>>> Integer - Choose whole numbers.
>>>> Decimal - Choose numbers with decimals.
>>>> Fraction – Choose numbers with fractions.
>>> Size – Select a size for Depth on Prospecting Scan display.
>>>> (Small, medium, large, or X-large)
> Rate - 16 – 60 – Select speed or rate of the Prospecting Scan data.
> Title – Label frequencies on Prospecting Scan display.
> Rule – Show reference scale with Prospecting Scan display.
> Phase Range – Adjust the phase data range.
>> Top - -93 – +95 – Select the phase at the top of the graph.
>> Mid - -94 – +94 – Select the phase in the center of the graph
>> Low - -95 – +93 – Select the phase at the bottom of the graph.
>> Phase Ref - Off – -95 - +95 – Adjust Curser line that is used to references phase.

Status Line – Select features to show on status line.
> On Top – Show status line top or bottom of display.
>> Size – Select the size of the Status Bar.
>>> (Small, medium, large, or X-large)
>> Show – Select what to show on the Status bar.
>>> Program – Show current Programr.
>>> Battery – Show battery conditionr.
>>> Frequency – Show frequency & type.

Live Controls – Select features for the Live Control, optionally across bottom of display during searching.
> Size – Select the size of the Live Controls.
>> (Small, medium, large, or X-large)
> Style – Select a visual format for the Live Controls.
>> Bare – Basic live control.
>> Knob – Slider knob style Live Controls.
>> Buttons – Button style Live Controls.
>> Meter – Gage style Live Controls.
>> Specific – Select each features, and each section of that feature, to be available on the Live controls.
> Wrap – At the end of the Live controls "X" automatically returns to the beginning, empty box stops at end.
> Action – Select Full Time, Pop Up, or hide Live Controls.
>> Full Time – Live controls always visible on display, reduces size of target indications.
>> Pop Up – Live controls listed and pop up full size temporarily during adjustment.

EXPERT MENU

Hide – No live controls, largest target indication display.

Extend – Expand, select and/or rearrange Live Control positions on the display.

Order – Select or rearrange Live Controls.

Menu – Select options for the Menu.

Size – Select the size of the menu text.

Small – Smallest size menu text.

Medium – Medium size menu text.

Large – Largest size menu text.

X-Large – Largest size menu text.

Expert Only – Eliminates the Six Block menu, Pressing Menu goes directly to Expert Menu.

Wrap – At the end of a menu, wrap automatically returns to the beginning, no wrap stops at the end.

Reenter At Top – Reenter at top , when entering a menu, starts out at the beginning of the menu.   When not selected, entering a menu begins at the point in the menu last used.

Quick Reference – Quick reference control or feature descriptions.

Topics – When ON provides "see also" links/suggestions within Quick Reference.

Loop Selection – Select the search coil size being used for better overall depth indications.

10" Double-D D2 – Standard Equipment Loop.

Super 12/300 – Optional twelve Inch Spider Loop

Eclipse 950 – Optional 9.5 Inch open center loop.

Eclipse DD – Optional 6 X 9 inch elliptical loop.

Eclipse 5.3 – Optional 6 Inch loop.

Eclipse Shooter DD – Optional 4 X 6 Inch Loop.

Battery – Select battery options.

Battery Type –For improved low battery indication accuracy, select the type of battery being used.

NiMH – Standard equipment Nickel Metal Hydride rechargeable battery.

NiCd - Optional NiCad rechargeable battery.

Alkaline – Back up non-rechargable alkaline batteries.

Auto Power Off – Automatically turn the power off during periods of non-use.

Inactive Limit – Select the number of minutes of inactivity before automatically turning the power off.

INFORMATION – Significant data or information.

Quick Reference – On board instructions.

Owner Registry – Read or embed owner information in the software.

Battery - Current battery voltage.

Custom Program Notes *(Six Block Menu)*

Programs	Coin&Jewelry 1	2	3	4	5	6	7	8	9
SENSITIVITY									
Rx Gain	7								
TX Boost	off								
Discrimination	85								
All Metal	70								
AUDIO									
Target Volume	40								
Audio Volume	8								
Tone									
Target Tone	180								
Threshold Tone	179								
Tone I.D.	off								
Wireless HD	off								
Channel	4								
Power Level	3								
Signal Monitor	on								
Speaker	off								
Multiple HD	off								
DISCRIMINATION									
Accept	-5 to +94								
Bottle Cap Reject	off								
Hot Rock	off								
Ground Filter	10.0 Hz BP								
FREQUENCY	3 Freq.								
GROUND TRACK									
Autotrac	on								
Report	on								
Inhibit	on								
Speed	25								
Offset	0								
Locktrac									
Offset	0								
Soil Type	normal								
Information									
Language	English								
Metric Units	off								
Backlight	20								
Quick Reference	read								
Owner Register	available								
Battery	volts								
Wireless	volts								
Expert Menu	off								

CUSTOM PROGRAM NOTES

Your copy of this Spectra V3i Owner's Guide is one of the first printed.

Please feel welcome to offer your comments, point out what is not clear, or correct any errors by contacting us via e-mail at -

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or
cmoreland@whiteselectronics.com

A full-color final version will be available to download at
www.whiteselectronics.com
or contact
White's Electronics, Inc. by phone at
1-541-367-6121
and a copy will be mailed to you free of charge.

- White's Spectra Metal Detectors -
Proudly built in
Sweet Home, Oregon USA