Field Test **Rutus Atrex**

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Fig.1. A colour screen and now multi-frequency.

Fig.2. Atrex with the optional white coil.

Fig.3. Noise level EMC colour screen enables you to choose the best operating frequency for the machine.

Late last year, while XP were getting ready to announce the Deus II and Nokta / Makro were revealing the Legend at Detectival, Rutus were busy working quietly in the background, finalising their latest machine, the Rutus Atrex (Fig.1). This new machine is similar in looks to the highly successful Alter 71 but with a newly released hidden gem in the form of a software update. I have been an avid lover of my Alter 71 since testing it back in 2019 and always have it with me when out detecting with other machines. I think it's fair to say it may not have a sleek collapsible stem or rechargeable battery like some of the more expensive machines, but hey, I know it well, understand the tones and enjoy using it still to this day.

So, when I first saw the launch of the Atrex, I thought it was just the Alter 71 with a different screen interface and, to be honest, was a little disappointed at first. The announcement was a little vague on the full features of the machine, but no doubt it would be as good as, if not better than the Alter 71, which made me look forward to receiving one to test (Fig.2).

Key Atrex Features

PRICING

Rutus Atrex (black coil) £615.
Rutus Atrex (white coil) £635.
OS-2 wireless receiver £665.

WEIGHT

Weight with batteries (6 AA cells) and black coil – 1630gm.
Weight with batteries (6 AA cells) and white coil – 1770gm.

OPERATING TIME

20-40hrs per Rutus, Actual was 34 hours on average, with a mix of headphones and speaker with high / low and multi-frequency.

MULTI-FILTER

This feature stabilises the Atrex signal when searching non-ferrous metal in highly mineralised grounds, commonly causing a reduction in a traditional VLF machine's signal. Ideal for high trash or areas with small iron in the soil.

71 FREQUENCIES

4.4 to 18.4 kHz range of frequencies available in notches of 0.2 kHz between each range. These are changed manually, and you have to perform a ground balance after each change, but this is very simple and quick to do.

4 MODES

Motion – your classic metal detector with discrimination.

All Metal Non-Motion – predominantly used to search for large objects (more common in Europe).

All Metal Motion – does as it says, and lets you discover large deep targets while ignoring smaller targets on the surface.

Dual – a motion mode with discrimination and allows for detecting with the machine at any speed setting.

All of these modes above are additional settings that I would recommend you only use once you have come to grips with the standard Motion Mode.

WATER REJECT

When turned on, this helps the Atrex in both salt and freshwater to combat the effects of ground conductivity issues. Only functional when the machine is set to 7 kHz and below or in Swamp Mode.

8 REACTIVITY SPEEDS

The option to adjust the speed of the machine in filtering the soil conditions from 1 (large objects or low mineralised soil) to 8 (small objects in heavily mineralised ground or amongst trash).

BUILT-IN WI-FI

This model has its own unique built-in Wi-Fi module, which mean that when turned on, the user can update the software on the Atrex via their laptop / phone / tablet without the need for Wi-Fi or Bluetooth from any other sources.

CHOICE OF BASIC OR ADVANCED MODES

Two modes are available, with Basic offering a simplified display and operation for beginners just wanting a 'turn on and go' machine, and Advanced, where a multitude of additional settings become available to extend your detecting abilities.

COLOUR SCREEN

The Atrex comes with an HD colour LCD screen (Fig.3), perfect for displaying the full-colour spectrum of any EMI interference via the EMI preview screen, ensuring that you choose the best frequency for your machine when out in the field.

9 BUILT-IN PROGRAMS (5 X USER PROFILES)

Basic – an excellent overall programme ideal for beginners.

Fig.4. Atrex box contents with optional white coil and OS-2 wireless transmitter.

Coins – a program optimised to search for coins.
Fast – similar to the coins programme but ideal for smaller targets in slight to mid- trash / iron-infested areas.
Ultra-Fast – a high-speed programme for the Atrex designed for searching for small coins amongst heavily junk and iron infested sites.
Big Silver – designed for searching for big silver and the larger copper coins, ideal for those 'cartwheel' pennies.
Smart Audio – another interesting new feature of the Atrex in the beginner's Field Mode – the so-called Smart Audio. It works as an intelligent algorithm in heavy iron infested areas to pull out good signals among iron (similar to the Etrac).

Arrival of the Atrex

In early December, the Atrex arrived (Fig.4). Opening the box, I thought it looked very similar to the Alter 71, with the same shaft set-up (albeit a sleeker matt black finish on the shaft) and the same coil, battery compartment, and handgrip. Even the control box size, shape, and button layout are the same. Assembly took minutes, and once completed, the Atrex is exceptionally sturdy. Alongside the standard DD 28cm black coil in the box, was a similar white coil with a slightly different design. Weighing in at 145g and heavier than the usual black coil, this is better tuned to motion / non-motion detecting. It looked rather smart in white, so I first installed this coil on the machine. Unfortunately, I encountered a few teething issues with the rubber washers supplied. I had a challenge getting the white coil between the shaft and the wing bolt as the washers seemed too thick. It turns out it was supplied with the wrong washers, but Rutus has resolved this now.

After installing 6 x AA (good quality) batteries in the Atrex battery pack (Fig.5), I turned the machine on to be greeted with a friendly games console-style tune with the clear HD colour

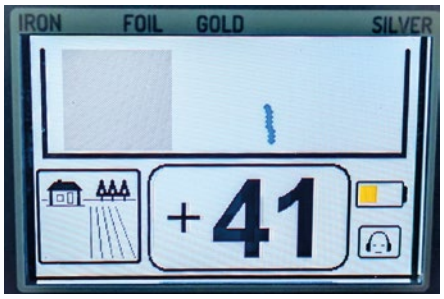

Fig.6. Basic Mode screen.

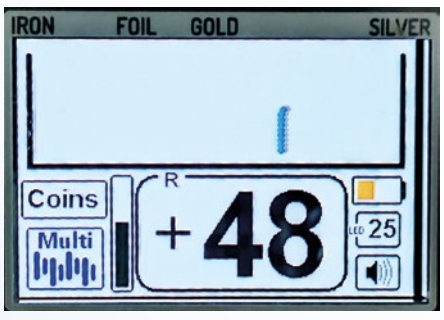

Fig.7. Advanced Mode screen.

Fig.5. The 6 x AA battery compartment.

screen. At this point, my wife poked her head around the door, looking at me somewhat confused. It later transpired that she thought I had purchased a handheld console and was playing a game. Within seconds, I saw the clear and easily understandable new Basic screen displayed after the joyful tune and intro (Fig.6).

Listening to Their Customers

Many have commented that the Alter 71 was too complicated for beginners to master, and it is good to see Rutus listen to their customers and put this option in place. A beginner can now run the more-friendly, Basic Mode with ready-made programs and simple, clear icons for most field conditions without all the complicated options – to good effect I would discover. Once you get to know the machine, you can step up to the Advanced Mode (Fig.7).

The Atrex has a unique feature that I found worked exceptionally well. From either your mobile phone (Android / iOS), laptop (Mac / PC) or tablet, you can connect directly to the Atrex via its built-in Wi-Fi module. There are no leads, just a direct Wi-Fi connection through your web browser. Once connected, you can perform a simple software update to the Advanced Mode with more features. I completed this numerous times in the field via my mobile phone while testing both modes (Fig.8). You don't even need a data signal on your phone as you are only using the Atrex Wi-Fi between both devices. Rutus has more software updates planned for the future, which can be easily downloaded with your device from their website, including one I tried out while testing the machine for its multi-frequency features.

Fig.8. Updating the Atrex in the field via a mobile phone took minutes.

The Multi-Frequency Update

Whilst testing the Atrex, Rutus contacted me to try a new software update for the Atrex. "Sure, no problem," I said. However, when I heard this software update would enable a multi-frequency option (Fig.9) on the machine, I was a little blown away. Arek, the man behind the Atrex, has been developing and experimenting for a long time with this technology. Arek is confident that the most essential thing about multi-frequency is not how many frequencies the machine transmits, but how many it receives and analyses to find an object. "Transmitting a frequency not received by the detector is a waste of unnecessary energy and a waste of batteries," Arek states.

This is a highly complex area that I am yet to understand fully. Still, Arek went on to basically describe the principles: "Single frequency detectors use a resistive signal 'Y' to detect objects. In contrast, multi-frequency machines use magnetic 'X' signals from multiple frequencies. The 'X' signals behave differently from the standard illustrations we have all become familiar with seeing."

One of the areas Arek had to overcome was that multi-frequencies are traditionally slow. The first multi-frequency detectors were developed and designed based on 8-bit microcontrollers, with a clock of 3.9 MHz and an efficiency of only 1.4%. Therefore the Atrex is not just a software update and a new screen from Rutus. It has a three times faster processor, HD colour screen, built-in Wi-Fi module and now multi-frequency capabilities designed in-house by Rutus!

So how many frequencies will the Atrex operate in multi-frequency? "As many as needed," was the answer from Arek. "If you are standing in a dark courtyard and want to keep an eye on the gate and the garden gate simultaneously, how many torches will you use? Two, only two are enough for this task. Any additional ones that shine into the sky are just unnecessary."

I should mention that this software update also works with existing Rutus coils, including the Sniper and aftermarket coils from Mars and MAS brands.

First Day Out

In theory, receiving the Atrex back in December was good for me as I had lots of time to detect but not so great in that that all my permissions were a little preoccupied, being either seeded or deep ploughed. However, one of the

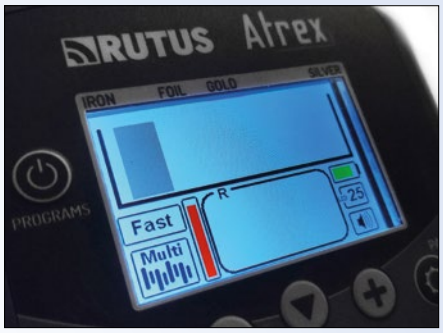

Fig.9. The Atrex in multi-frequency on the HD colour screen.

permissions I have been working on for a while raised its head. I had been given the number of a local farmer looking for someone to metal detect on his land! I knew this was a very infrequent occurrence and wondered if this was merely a ploy to bundle me into a bottomless pit full of other people in the hobby to stop them knocking at his door every Sunday lunchtime asking for permission?

As it turns out, the farmer had retired, and his son had just taken over and wanted to meet with someone to find another hoard on his land. I thought, "Another hoard?" Well it turned out that 15 years ago that's exactly what had been found on the land. If my call had been a video call, the farmer would have said "No" straight away based on my expressions and my silently jumping up and down watched by my highly concerned wife. I eagerly responded, "Oh that sounds fantastic. When do you want me to pop over?" As we all know, it is not easy getting permissions, and this was the perfect scenario.

Fill Your Boots

After meeting up and signing contracts, confirming the available fields on a map and creating a WhatsApp group for myself and my detecting buddy (to share our finds with the farmer each time), I shook the farmer's hand and asked if it was okay to start straight away. "Fill your boots," he replied. So, armed with the Atrex, I headed off to three fields just a short drive away. I had been studying these fields for quite some time now as I hoped I would gain permission one day, and finally it had happened.

After parking, I headed off to the top of the first field. The ground

Fig.10. A semi straight line on the hodograph display of the Atrex in Basic Mode, showing a nice target.

Fig.11. 13th century shield-shaped heraldic horse harness mount found with the Atrex Basic Mode.

was very saturated at the bottom but became less claggy underfoot as I clambered through the mud and now rotting stubble. Turning on the Atrex, the chirpy tune and colour screen jumped out, asking me to ground balance the machine. I always carry this out with the Alter 71 many times when detecting. Still, in the Basic Mode using the Field setting, I thought I would pull back the finger trigger under the control box and run the machine as possibly a beginner to detecting would. Selecting the Field Mode (with the Smart Audio feature), I headed my way across the top of the field, intending to test out the machine in the saturated area later on in the day.

I first used the Atrex without headphones to test out its inbuilt speaker. The sound output coming from the speaker behind the battery storage at the rear of the machine is loud and very clear, even at maximum volume. I found the Basic Mode Smart Audio tones new to the Atrex a joy to the ear, crisp and sharp in identifying the non-ferrous targets. This area of the field was a heavily laden iron area, apparently once used to store farm machinery based on what was still lying around on the surface.

Heraldic Stud

After about 15 minutes with no significant signals, I had a lovely tone that I knew would be something good. I had been feeling a little frustrated running the Basic mode as I feared I could be missing out running in the Basic and not Advanced mode. I was wrong. The signal came in at 38 and with a reasonably straight line (Fig.10) on the hodograph display on the Atrex (to show a non-ferrous metal when not in the iron range on the display). I dug down and pulled out the clod – after rummaging around with my pinpointer for a few seconds, out dropped a small object from within the clod. At first, I thought it was just a bit of lead, but I was delighted to discover that it was in fact a lovely 13th century shield-shaped heraldic horse harness mount (Fig.11). "Atrex is working well in Basic Mode," I shouted over to my detecting buddy. I was extremely pleased and confident now in this mode – maybe basic in appearance, but not in action.

Being Positive

Positivity is essential when detecting, and I now felt more positive than ever and continued with my muddy, wet knees from the saturated soil. Now I had connected my aftermarket headphones using the new Rutus wireless receiver, OS-2 (Fig.12). This is much better than the original OS-1, which was available for the Alter 71. The Atrex comes with its own built-in wireless transmitter that communicates with this receiver and works a treat. You can use any headphones with a 3.5mm jack or, if you have a 6.35mm jack, you need a simple adapter. It connects with the machine instantly once you activate the wireless setting on the machine (not to be confused with Wifi) which offers 10 channels.

I liked that the OS-2 came with a nice holder to clip onto your belt or jacket and, when you turn the machine off and then on again, the headphones automatically connect with no problem at all. The built-in battery is rechargeable via the supplied USB lead. I managed 17 hours of detecting until it needed recharging again. Rutus will soon launch their own wireless headphones that will connect to the Atrex without the need for the OS-2 receiver, which I feel will be a great addition.

Fig.12. The OS-2 wireless adapter worked a treat with aftermarket headphones, much better than the previous OS-1 solution from Rutus.

I continued for another four hours on the Basic Mode and began upping the Sensitivity, which only goes up to 75 in this mode. Rutus advise new users to stick below 60 but I managed it at the full 75 with no problem. I was impressed with the depth I was getting, especially how well it was picking up coins in Field Mode. A lovely King William IV silver

Figs.13a & b. Obverse and reverse of a William IV silver groat, found with the Atrex in Basic Mode.

Fig.14. Many coins were found with the Atrex but sadly most were worn.

Fig.15. A nice little hammered up with the Atrex, helped by having the Multi-Filter turned on.

coin (Figs.13a & b) and a few other, mainly worn but well-aged coins (Fig.14) came up from an average of 8-12 inches.

Basic to Advanced Mode

The time had now come to test out the Advanced Mode on the machine, as shown in Fig.7 above. This opens up the Atrex with a vast array of additional settings often found on more expensive machines. It allows you to adjust and tweak the Atrex via its intuitive interface, which I found extremely easy to use after using the Alter 71. Still, with its large display and easily navigable back-lit colour screen, anyone should find this simple enough. I could go through every setting available but would end up writing a book, however I will say the key ones that stand out are as follows:

71 Frequencies to Choose From

Ranging from 4.4 kHz to 18.4 kHz and very simple to adjust, you can choose the perfect frequency for your search conditions – this is something Rutus have always done well and continue so on the Atrex.

9 Detecting Modes to Choose From

As well as being able to choose Motion and Non-Motion on the Atrex, there is a programme built for almost every detecting situation. The new addition of the Swamp and Beach Modes are very welcome for those waterlogged fields and hopefully sunny beaches this summer. If none of those takes your fancy, you can easily create five of your own personalised programmes to be stored on the machine.

In the Basic Mode you have five programmes to choose from. Beach, Forest, Park, Field and All Metal, with a maximum sensitivity setting of 75 as opposed to 99 in Advanced Mode.

EMI Preview Display

It's not often that I encounter electromagnetic interference on my permissions, apart from the odd electric fence, but this can sometimes pose a problem when out on a club dig. The Atrex has a lovely colour display for the EMI preview by simply pressing the power button while selecting your frequency in the menu screen. The height of the blue bars determines the areas of most interference. You can easily change your frequency to the one with less interference with the - and + buttons. I had great fun with this, wandering around my house and garden, seeing which device caused the most interference.

When field-testing the Atrex, it was fascinating to see the results given off by other detectors. I experimented with a mix of VLF and multi-frequency machines, and only the Equinox created enough noise when next to the Atrex that I was forced to change the channel.

Multi-Filter

The Multi-Filter is a great little feature from Rutus that significantly increases the effectiveness of detecting non-ferrous metal objects in heavily mineralised soils and light to moderate trash areas. It runs in the background and doesn't come into play in normal soil conditions. However, if the signal from the ground is greater than the signal from the object, the multi-filter uses the data archived for the last tens of milliseconds to reconstruct the approximate ID and signal of the non-ferrous object.

I found this significant effect when detecting a highly mineralised ground on one of my permissions which produced the first hammered with the Atrex from some six inches down (Fig.15). I turned the Multi-Filter off and reburied the hammered coin – based on the signal and tone it produced, I don't think I would have dug it.

Recovery Speed

As well as the above key features, I found the recovery speed blisteringly quick on the Atrex. It seemed slightly faster than the Alter 71 and up there with the more prominent and expensive brands. I did find, however, that on some occasions in heavy iron areas, with no discrimination, the iron tone slightly overpowered the good target tones. This made me go over the good targets again more slowly, and then the Atrex did manage to pinpoint the targets. I had a play with the Tone, Reaction and masking settings, which slightly improved this.

As for pinpointing, the Atrex uses the pull trigger lever on the underside of the control box. A bit clunky some may feel, but once you get used to how quick and easy this is, it works like a dream and is a pleasure to use. As far as pinpointing accuracy goes, the Atrex proved spot on, with no problems at all with either coil on the test, including

in shallow water. The horizontal bar reading on the screen representing depth was sometimes a little out if I'm being picky, but I went with the tones from the machine rather than looking at the screen (Fig.16).

The Atrex Features

As I stated in the first part of my review, the Atrex is not just a software update of the Alter 71 but a faster and more powerful machine with added features and a new colour screen. However, most of my testing was in the standard Basic and Advanced Modes, not multi-frequency. I still believe that single frequency VLT machines and those with 'manual' adjustments to switch to other frequencies are far from dead. Multi-frequency has its advantages but so do single VLF machines, which the Atrex was initially launched as. The nine built-in programmes on the Atrex (five on the Basic Mode) have been well developed by Rutus and performed well in testing.

I gave it a brief test on the beach on a very wet January day, where I gave up before the Atrex. Using the Beach Mode and a ground balance on damp sand, and with the sensitivity set at 85 with the white coil, I at first thought there was a problem with my headphones. The Atrex was quiet, much quieter than its sibling, the Alter 71. Moving on from the wet sand, I entered the edge of the wash from the waves, and the only interference I encountered from the machine was when the waves were lashing over the coil. I continued up the beach onto dry sand, where the Atrex remained stable.

In my short time on the beach, I found many small lead fragments at depths of around eight inches and a pound coin at ten inches, all producing a lovely two-way tones and straight line on the hodograph display.

In the short hunt, I had here, my modern-day finds covered my car parking costs and the Atrex was a pleasure to use. I have yet to test how

Fig.16. One of the 10 Multi-Frequency Modes available to choose on the Atrex.

it deals with finding gold / jewellery in the multi-frequency mode on beach conditions but feel confident it will be a vast improvement.

One other mode which is new from Rutus is Swamp. Not that I can honestly say I enjoy detecting in swamps, but I can only associate this with a flooded field or boggy forest here in the UK. This mode runs at a very low frequency of 5.6 kHz and is in line with the Deep Mode but turns on the Water Reject option. This has been designed specifically by Rutus by simulating the effects of water against the detector using several frequencies, then subtracting the signal produced by the water to enable a more stable machine.

The Water Reject option can also be turned on with other programs such as Coin Mode. Rutus recommends choosing a frequency of 7 kHz or less when using this. I did try this function on a flooded piece of pasture and can confirm it worked well, and the machine did not produce any falsing due to the wet conditions.

Multi-Frequency

As I mentioned earlier, I was fortunate to be involved with some of the early testing for Rutus on the multi-frequency software on the Atrex and they have also listened to the testers and made numerous updates. I believe the version I am working with is the final one and hopefully will be available to download by the time this review is published. So how does it work? Once downloaded from the Rutus website, the file is then uploaded to your Atrex from your PC / Tablet / Mobile phone in minutes, and you are ready to go. In the Advanced option, select a search programme of your choice – for example, Coin Mode, you increase the detector frequency to above 18.6 kHz. You then get the option to choose from ten multi-frequency options M1 to M10. Each of these represents a range specifically developed by Rutus – understandably, they don't want to share how this technology works, and even if they did, I would probably confuse people even more trying to explain it. The M1 to M10 options allow the user to choose the best multi-frequency range with the least EMI interference based on a graph. Quite simple, really, and an excellent visible option to have. I ran the Atrex in M1 for most of the time – when I occasionally had a little EMI, I jumped it through the ranges until it disappeared.

Fig.17. My daughter finding the Atrex Basic Mode enjoyable and easy to use on our first trip out.

Noticeable Changes

I found whilst running in multi-frequency against the standard fixed frequencies, that the audio frequency

seemed stronger, enabling me to identify targets more effectively than the single frequency, especially at depth. Also, I found I could run a higher level of sensitivity in the standard range of programmes and the target ID was much more stable. Whether it improved my detecting experience hugely is too early to say, but the software has been stable so far and a fascinating addition to this machine from Rutus. I will continue to test the multi-frequency to see how it performs and am especially interested in how it performs against the competition and different soil types, especially a freshly ploughed field and the beach.

Summary

I have enjoyed my time with the Atrex over the last few months and pleased that I delayed my review to test out new multi-frequency updates for the machine. The Atrex is very capable in both Basic and Advanced Modes. It is more stable than the Alter 71 which some find a little 'chattery'. The key thing with the Atrex, like a lot of machines coming on to the market now, is the ability to update the software. No doubt Rutus will continue to bring improvements and new features to aid your detecting experience and possibly utilise the colour screen more?

I like how simple it was to update the machine, with no special software to install on your phone, PC or tablet. I would say this is the easiest update to facilitate on a detector from any manufacturer so far. One thing I would point out is the instruction manual on the main Rutus website under the Atrex is the Advanced Instructions. You have to go to downloads to download the Basic Instructions which are a lot simpler for a beginner to understand. I feel if you read the Advanced Instruction Manual by mistake you could be easily put off.

I actually found having to use 6 x AA batteries was a nice change – you can always use rechargeable ones. Any last-minute chances of detecting, for example a nice afternoon after leaving work could be seized upon – I could just turn on the machine and detect not having to worry if the machine was charged up. If the batteries were low I just popped some replacements in.

Concerning the colour screen, I did struggle with contrast in full sunlight at times when the supplied protective control box cover was on. However, this was the same for the Alter 71 and once the cover was removed the screen became a lot more visible.

If you are looking for a machine which can grow with you, whether a beginner (Fig.17), or experienced detectorist, I would highly recommend you give the Atrex serious thought. It comes up against a lot of machines based on the price bracket it is in, but once mastered, especially now with the multi-frequency, I feel this could be the 'sheep in wolf's clothing' of detectors.