

The Eton Elite 750 is much more than just a fancy-looking boom-box shortwave receiver, reports WB6NOA, who listened to all it has to offer, including longwave, shortwave, the AM and FM broadcast bands, and the VHF air band.

CQ Reviews:

Eton Elite 750 Shortwave Receiver

BY GORDON WEST,* WB6NOA

As ham operators, we know not to pre-judge a radio by just how it looks, or how many buttons and meters it may have on the face. Like many of you, I have a collection of no-name bargain mail-order portable shortwave (SW) receivers, but few can hold a candle to those from name-brand manufacturers. Now, this monster-sized Eton receiver is hitting the market in grand style.

The Eton Elite 750 is major-sized multi-mode receiver, fun for a radio enthusiast wanting to tune in what's out there from 100 kHz to 30 MHz, plus the AM and FM broadcast bands and AM air-band reception.

The Eton name may be unfamiliar to you, and the 750 looks a lot like a previous radio from Grundig. Actually, the two companies have a relationship that spans 35 years, as explained by Eton CEO and Chairman Esmail Amid-Hozour. "From our initial partnership with Max Grundig in 1979, Eton has carried on Grundig's 75+ year legacy in developing the best-in-class world band radios." Esmail continued, "Eton's dedication to design and innovation spans partnerships with Drake to ensure high-sensitivity engineering and design houses, such as Porsche Design Studio, to ensure the exterior look and feel that began back in 1944 is experienced by each user today."

"In recent years, Grundig GmbH has refocused its efforts on other Grundig business units, whereas Eton has maintained our zeal for continued product innovation, supporting retail market development and maintaining customer service of the Eton shortwave radios in North America, that we have become known for with avid shortwave users. Eton is proud to carry on the legacy as

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The large speaker makes the Eton Elite 750 a great poolside or beach entertainment radio, too! Plenty of audio output, enough to also power a personal music player that can plug in.

we bring new and exciting shortwave products to the market each year."

Exploring the Elite 750

With four D-size batteries installed, let's explore the 750's capabilities, bottom band to the top bands, from longwave (LW) 100 kHz to high frequency 30 MHz, and then FM broadcast band, plus exciting AM aeronautical calls. With Phased Locked Loop (PLL) tuning to a large frequency display, plus 1,000 channels of memory, let's explore each band for unique features found in this step-up receiver. By the way, the Eton PLL tuning is totally RF-silent — no clicks when you spin the major-sized dial.

Longwave 100 kHz to 519 kHz

This band can be toggled with the medium wave (MW) / LW button. MW reception for AM broadcast radio, and LW for

non-directional radio beacons (NDBs), Navtex, 630-meter ham radio CW beacons, and various government stations lurking down here.

This is a nighttime band for NDB skywave reception. The free website <AmateurRadio.com> regularly runs articles from low frequency radio groups and their amazing beacon reception results (see <www.ndblist.info>).

LW radio listeners often focus on specific LW band segments, such as 335 to 349 kHz. The group participates monthly for this Coordinated Listening Event (CLE) activity. Their latest catch at 335 kHz, was YUT, located at Repulse Bay, Nunavut, on Baffin Island. Also found was AA near Fargo, North Dakota, on 365 kHz. Subscribe free to AmateurRadio.com's *AMATEUR RADIO NEWSLETTER* to see their LW reports.

I tuned the ham segment from 472 to 479 kHz, and heard several low-power CW beacons coming in via skywave, around midnight. You can enhance NDB reception by pushing the SSB button and fine-tuning the NDB CW ID with the SSB / BFO (beat frequency oscillator) knob. The button toggles between AM / USB / LSB reception.

The LW band and the AM radio band may use the continuous-turn rotatable loop stick antenna on top of the unit for bearings, and best reception. There is also the ability to bypass the loop stick antenna with a long wire, for added reception away from local noise sources. Excellent LW reception is at night, if you are patient. It was straight-

forward to put the received NDB reception frequency into memory, too.

AM Radio 520-1710 kHz, in 10-kHz Steps

Toggle the Eton MW / LW button for this MW broadcast radio band, and remember, the top loop stick rotatable antenna is active. Excellent sensitivity, here, too, with capabilities on the Eton to drop in 10 dB or 20 dB attenuation.

This is a great radio for nighttime broadcast band DXing. Use the SSB mode with the BFO knob to really hone in on skywave stations at night. Full fidelity in the AM mode for the ball game party, with 2 watts of audio output, plus bass and treble controls for just the right sound. You can even pipe in your personal music machine for the 2-watts output, too, via the LINE IN jack, next to the 3.5-millimeter stereo earphone jack. Lots of interesting local things to hear just above 1600 to 1710 kHz.

At night, this is a great sensitive broadcast band DXing machine. Add a long wire, too, to the jack on the fully rotatable loop stick — “fully rotatable” meaning the loop stick DF antenna has no mechanical stops. The loop was great at night to home in on distant signals while at the same time nulling out interference from nearby stations 10 kHz away.



This large-sized Eton 750 portable receiver boasts full-fidelity AM radio reception, air band, and stereo FM reception, in addition to the low frequency beacon band and ALL shortwave bands from 1.7-30 MHz non-stop, AM or SSB.

Shortwave, 1711 kHz to 29.99 MHz

By pressing the SW button, you enter the shortwave mode, and each button push again shortcuts directly to the worldwide shortwave broadcast bands at 120, 90, 75, 60, 49, 31, 25, 22, 19, 15, 13, and 11 meters.

Your initial SW antenna is the tall telescopic “whip” at the upper right top, sturdy enough to withstand an accidental brush with an elbow or tree limb. Extend it all the way for best SW reception of weak signals. Use the WIDE filter mode for double sideband reception.

Tune in these few remaining powerful shortwave broadcast stations in the AM mode, WIDE filter setting, then try SSB to make them out easier during fades in reception. Use the BFO knob to fine-tune SW stations as a serious DXer. Try NARROW filter reception and see if it improves what you are trying to tune into.

Next, there are the ham bands, of course, from 630 meters to 10 meters. But ham signals really need that outside antenna — either a 50-ohm coax to a spare dipole, or a long wire from the grounded Eton to a tall tree out back.



The large LCD display makes tuning in frequencies a snap. Here we are tuned in to 15 meters, ham SSB reception, using the BFO to tune in upper sideband, or lower sideband on lower ham bands, plus CW and data.

You should tune ham signals in the SSB mode, 1 kHz, vs. 5 kHz used for broadcast SW stations, and tune ham signals carefully. Use NARROW filter mode for the ham bands. Choose either USB or LSB per the band plans. Make sure you choose the correct sideband or else you may hear voices, but not be able to understand them, until you select the correct sideband. Generally speaking, hams use LSB on 75 and 40 meters, with USB standard on most other HF bands.

Since SSB reception is recovered via the BFO, adjusting the too-tiny BFO knob requires lots of patience, and the understanding that this is not a dedicated ham radio receiver like you probably have at your home or portable station. Most ham sets can tune in 10- and 100-Hz steps; the 750 tunes in 1,000-Hz (1-kHz) steps, so start with the BFO knob straight up and adjust + or -, like doing brain surgery as both hands are busy with the big tuning knob, and the small BFO knob, for ham and utility SSB signals. I wish the radio would tune with the BIG knob SW frequencies for the ham bands in 10-Hz or 100-Hz steps, not just 1,000-Hz steps.

Get started on SW reception with the WWV time signals at 5, 10, 15, and 20 MHz, first in the AM double sideband mode, the select SSB for SSB reception on each side of the carrier.

Sync Detector

“The Sync Detector circuit is a circuit that combines the incoming radio signal with an internally generated signal within the radio, to shift the incoming signal and the noise to higher frequen-

cies, and thus out of the noise,” explains Skip Orvis, the Chief Technology Officer at Eton. “A low-pass filter is then used to extract the original signal from the noise. This helps to improve sensitivity for low signal strength stations.”

Ham SSB, CW, and data reception is possible with just the telescopic whip, but a long wire really makes a big difference. Be sure and switch from INT antenna to EXT antenna combos, on the right end of the Eton. If you forget and leave the switch in the wrong position, you may not hear much.

On the right side of the Eton, this is where you add the longwire for the SW bands. And for ham signals you can also try your HF ham antenna into the 50-ohm BNC jack.

Try different antenna combos, especially in the house, as the Eton built-in telescopic whip would also pick up static from home electrical circuits. An outside antenna really helps for the effort to try and tune in hams via sky wave.

The Eton is indeed SW sensitive, with dual conversion, but not a match for HF ham sets with lots of added stages of selectivity for signal processing, along with dedicated LSB and USB filters, rather than the BFO to recover SSB as the Eton employs.

“The Elite 750 does not have internal DSP. It is an analog radio with a 455-kHz intermediate frequency output signal, for use with an external software DSP demodulator if desired.” adds an Eton bench tech. The instruction book indicated DSP (digital signal processing).

Remember, not many portable SW receivers have any capabilities for ham SSB, CW, and data reception. This Eton

does, with some effort, until memorized, and still needs BFO tweaking.

Beyond Voice

You can download weather facsimile charts, Coast Guard and FAA long-range digital transmissions, ham CW stations, and any other HF analog or digital signals, by connecting to the line output jacks, on the rear of the Eton radio to your computer (L and R for a stereo amplifier).

WARNING: Even with the attenuated line output jacks, be very cautious you don't overload your TNC or sound card.

Tweaking Your Signals

There are some adjustment controls that help on HF reception, such as the automatic RF gain control, plus manual adjustment of the RF gain, attenuator, and squelch controls.

The squelch control is like no other squelch control found in other portable receivers. Instead of a hard squelch ... on ... or squelch off ... and the annoying pop with squelch in and out, the Eton uses a unique “soft squelch” in which the knob allows for full RX, then slightly reduces background noise as you advance the knob clockwise, and then full squelch where even mid strength signals easily come through. Very nice, and a surprise over “hard”



The analog S meter allows you to see incoming signal strengths, and watch HF shortwave peaks and valleys of reception, due to ionospheric conditions that are always changing.



Mode buttons make changing bands easy. Push the MW / LW button twice to get to the low-frequency beacon band.

The sturdy telescopic whip has a protective tip on it, and should be fully extended for shortwave, distant air band transmissions, or distant FM music band reception. Swivel it for best reception. You can also add your own long wire or dipole.



The loop antenna turns freely without stops. The loop is active on the longwave beacon band and AM broadcast band. Turn it for best reception. You can also plug in a long wire antenna to the loop.

thump-thump squelch circuits on most other portable radio brands and models.

FM Broadcast Band 88-108 MHz

The FM band is, of course, stereo, with earphones in the jack, or line out to a stereo amplifier. Great sensitivity to those low-power FM stations at the bottom of the dial, too. The whip is active on FM radio, and you switch over to an external FM 50 ohm or dipole antenna that may pull in distant station over the telescopic whip fully extended. There's a big corona ball on the end of the whip for eye protection. Smart.

Sky High, 118-137 MHz AM

Pull the whip out again, all the way, and tune in AM aircraft and ground stations, like your local airport tower. No local airport? Tune in aircraft getting vectored as they cross the country at high altitudes.

This is AM reception for aero band reception, so you will notice the normal background noise a lot less. Keep the squelch all the way OFF, RF gain full on, and set the steps to >> on the display for 25 kHz. This will eliminate a ton of dial twirling, and you will end up smack dab on local air and tower / ground stations. Just go to 25 kHz ">>" steps, spin the knob, and be ready to tune back to any loud sound coming out of the speaker — these aircraft stations may only

stay on the air for a few seconds, so you gotta be fast to nab air traffic.

New hams ... tune in these active air channels, and learn the techniques of passing traffic. These aero comms are ultra-fast, and it takes great practice for a pilot and tower to take many seconds of dialogue, and get the message through in less than 5 seconds. Even 5 seconds is too long for the pro pilots and tower personnel.

Just be sure, on the air band, to select the correct antenna on the right end antenna switch, and ensure you pull up the telescopic antenna to its full length. Half up, nill reception. Get it ALL the way out. Also ensure you have selected which antenna you are using on the right side of the receiver.

More Standard Features

The Eton Elite 750 comes loaded with standard features. Here's a sampling:

- Automatic scanning of a band, with automatic memory channel loading into memory bins on LW, AM, and FM.
- An automatic memory storage sorting system allows for an effortless way to group favorite memory channels in an order you like best for fast recall.
- Adjustable RF gain control knob.
- Comes with an AC adapter wall wart, 6 volts DC, but watch out ... this setup on 6 volts has the tip as NEGATIVE, not positive. It won't charge the D cells, even if they are rechargeable. A nice storage spot in the back of the unit stores the transformer-type wall wart (no switcher noise).
- Direct frequency input on the keypad, plus up / down buttons, and the big tuning knob with a good heavy feel.
- Dual alarm clock, sleep timer, snooze, and clock.
- Light button for 5-second light or constant light. The manual indicates that the light left on will drain the batteries faster. On normal receive, the unit pulls only 80 mAh, and with the light on, add an additional 10 mAh, so not much more power consumed with the light constantly on.
- Multiple auto and manual memory channel capabilities; 1,000 channels in multiple page storage slots, easily configured for fast band recall of memo channels within that band.
- Two large handles for carrying — not to be confused with rack mounting.
- Bass and treble settings for boom box music.
- Wide or narrow bandwidth. Wide for AM shortwave stations, narrow for most other two-way radio modes.
- Big red on / off button. (Embarrassing when we hams can't figure out how to turn on our new HT). Oh, with this rig OFF, it still draws a couple MICROamps of current for the turn-on circuit and LCD display, so remove one of the batteries for long-term storage.
- Runs on 4 common D cells — get a name brand set, so in case the batteries die, they may not leak too badly.
- For overseas operation, the AM broadcast band can be switched to 9-kHz steps, and the FM band may be selected to begin down at 76 MHz.
- The included instruction manual is small, in several languages, and you may need your granny glasses to read the 23 pages. It reads well, in a matter-of-fact way:
 1. "Increase volume clockwise, counterclockwise to decrease the volume."
 2. "During the day, use bands with frequencies above 13000 KHz. (Actually, kilohertz is abbreviated with a small "k", kHz.) At night, use bands below 13000 KHz."

List price was seen on the internet at \$399, with delivery about the time you read this. For more information and specifications, visit <www.etoncorp.com>.