

## Grundig Satellit 750 – Eton's New Flagship Radio

By Larry Van Horn, N5FPW

**E**tón Corporation recently released its long awaited Grundig Satellite 750 LW/AM/SW/FM portatop radio, and the *MT First Look* team had a chance to put the unit through its paces. Esmail Amid-Hozour, CEO of Eton Corporation, says "The Grundig Satellit 750 is a model of what shortwave radios should be and Eton is proud to offer this high-quality Grundig product to our discriminating shortwave listeners."

When I pulled the rig out of its display box, it was the first time I had seen it, and my first impression was of a radio with a bit of a retro look back to an earlier era. I have owned a number of portables through the years, and this radio's general appearance reminded me of some of the beefier portables from the late '70s and early '80s. It has two large handles on each side of the radio, a carrying handle on top of the radio, and a rotatable ferrite coil antenna for longwave/broadcast band reception. The signal strength indicator is an analog meter, not the normal LCD segmented meter you see on portables offered in today's marketplace.

The Satellit 750 offers complete coverage of long wave, medium wave, and shortwave radio frequencies. Shortwave coverage includes the reception of the single sideband (SSB) mode allowing the reception ham radio operators, maritime and shortwave aeronautical stations. You can select either wide or narrow selectivity to reduce co-channel interference and you can tune stations using the conventional tuning knob, quick keypad entry or via the 1000 memories that the user stores.

The 750 also receives the VHF aeronautical band (118-137 MHz), and the FM broadcast band (stereo reception available via the headphone jack).

### ❖ Inside the Box

The radio was well packaged in its display box and it comes with an AC/DC wall wart, owner's manual, and warranty registration card. The case is made of a black hard plastic and overall construction appears to be solid.

Overall ergonomics are fair. Number buttons and other major control buttons are large and have a good feel. The display is large and easy to read, especially with the amber backlighting on.

When I applied power and tuned around in the AM/FM bands, I noted that the radio provided good audio quality and volume. Reception on the FM broadcast band in our rural area, even on the internal whip, was very good. AM broadcast band reception was reasonable, but I had to cut off all the laptop computers in the shack. When they were on, signals on the AM band, except for local stations, were completely covered up by extensive computer interference. I do not have this issue with any other radios or portables in my shack.

On the plus side, I did note that the 750 has a lower noise floor than on some previous models of Eton radios, specifically the E1XM. This may have more to do with the type of display used on these radios than anything else.

Shortwave reception sensitivity was good throughout most of the tuning range. Unfortunately, we could not find any signals above 17 MHz that we could compare with our base line portable test receiver (a Sony ICF-2010), due to the low sunspot numbers. The signal strength of single side band (SSB) stations in the HF spectrum was good, especially compared to some other portables we have tested in recent times.

My biggest disappointment with this radio is the way it handles the tuning of single sideband (SSB) signals. There are several conventional and well established ways manufacturers have handled this chore over the years. For instance, the best and most common method used in most current portables is to hit a switch marked either USB or LSB, and using filters, you receive that mode. Proper receive offsets are built-in to the filters and accurate tuning of SSB signals can be accomplished. Another method is to press a switch marked Mode or

sometimes SSB, and each time you press that button you get a different reception mode (e.g. mode selection on later Drake receivers). Either method works very well.

If you go back about a generation, radios from that era used a more straightforward method of tuning SSB signals. You pressed a button marked SSB or BFO (Beat Frequency Oscillator), and then you turned the potentiometer control either right or left of center to clarify or tune in the SSB signals you were trying to receive. I even have one portatop that has a BFO control marked with LSB (turn the knob to the left to tune in a LSB signal), and USB (turn the knob to the right to tune in an USB signal).

The Grundig Satellit 750 method of tuning in SSB signals seems "convoluted" in its approach. Their method basically combines all the three methods I have described above and rolls them into one.

The Grundig has a USB/LSB mode selection set up on one button (like the later model Drake radios), but then you have an additional step in order to tune in a SSB signal. This additional step involves further tuning of the SSB signal using a "BFO" (beat frequency oscillator) control. This BFO is not a fine tuning knob, and, yes, on the model I tested I could change my sideband selection by shifting the BFO knob in the opposite direction than my original tuning setup. This brings up all sorts of issues regarding accurate frequency readout in SSB, accurate mode reporting, and other issues while operating this radio in SSB. If the '750 had just included some finer tuning steps, the BFO control could have been eliminated, and tuning SSB signals could have been accomplished more easily by the user.

In sum, while this radio has the sensitivity to receive SSB signals in the utility and amateur radio bands, the tuning method is a detriment to accessing those signals easily, accurately and properly.

The base and treble controls allow for a wide range of adjustment so you can set the audio just right for the station being received. The wide/narrow filters are selectable regardless of mode on all bands except Air. This is something you normally don't see on most portable radios and is a welcome feature.

One of the common com-



Overall rating: 2 and 1/2 stars

## MT FIRST LOOK RATING (0-10 SCALE)

Audio Quality.....	6
Audio Levels.....	6
Sensitivity.....	5
Back light.....	5
Display.....	6
Battery Life.....	6
Ease of use.....	7
Feature Set.....	5
Keyboard/Button/ Control Layout.....	5
Manual.....	3
Overall Construction.....	5
Overall Reception.....	5

plaints about the feature set of this radio is the lack of synchronous detection. That doesn't bother me as much as the lack of an automatic loudness control (ALC) and automatic gain control (AGC) features. You will be riding the volume control quite a bit as you tune around with this unit, due to the lack of an ALC control. It appears that the AGC is set for a slow recovery and it is not adjustable.

### ❖ Overall Rating and Final Thoughts

Overall, I have mixed feelings about the Grundig Satellit 750. Contrary to the way some have characterized this radio, I do NOT believe it is a major improvement over the now discontinued Grundig Satellite 800. And, as is the case with most radios, there is room for improvement, especially at the suggested MSRP of \$399.

Probably my biggest concern with the Satellite 750 is that it is a double, not a triple conversion radio. We didn't experience a lot of problems in this regard here in Brasstown, but I am not sure that will be the case by other end users in more robust RF environments.

On stronger SW radio signals, when connected to an external antenna, I did note several instances of dynamic compression. The radio just could not handle the amount of signal being fed to it. When we would switch from the external antenna to the whip, the signal strength would improve dramatically, in some cases 20dB or more.

The manual gets an "F." It is not well written, has some obvious errors, uses very small type, and it is printed in low contrast grey ink, which makes it very hard to read.

As with its predecessor, the Satellit 800, it appears there may be some quality control issues. The VFO knob wobbles and is entirely too loose. In the past, Satellit 800 users reported the tuning knob eventually falling off. A quick check with other radio enthusiasts who have used the 750 indicates that their units also have wobbly tuning knobs.

I am not a fan of the battery contacts or battery compartment. The "+" side uses a coil of wire rather than a metal plate like a lot of other radios. It is only a matter of time before the batteries will have a problem maintaining contact and providing power. This has been seen on more than one model of portable radio where wire coils have been used for the positive contacts.

The other issue is that the battery compartment door is flimsy. It's a pretty tight fit, and if the door is not seated and secured properly, the weight of the batteries will cause the door to pop open and you will have D size batteries spilling out of the back of the radio.

I discovered this issue when I tried to tilt the radio during AM broadcast reception. This radio's design is not conducive to tilting. Not that you can't, but your batteries may fall out, and it is difficult to maintain a tilt, since it is not designed for it.

Another power issue is that this radio uses a wall wart that is center pin negative. Yes, the shield is hot. You need to keep this in mind if you are going to use an alternative power source or need to replace the AC/DC wall wart.

The AM/LW rotatable antenna works well, but if you put your hand on it anywhere but the at end of the bar to turn the antenna for null or peak reception, it will skew the reception pattern when you remove your hand. The compass rose style dial below this antenna is probably of little use, as it is hard to read and appears to be slightly off in calibration.

I also noted that the radio exhibits a chuffing sound when turning the tuning knob at a moderate tuning speed. This is probably an indication of muting and may result in a signal being missed while doing band scans. I also received a report from one listener that his radio exhibited some sort of noise when tuning the VFO rapidly. However, we did not notice this effect on our unit.

Finally, the volume control is not where you would expect to find it. Granted, I am right handed, but most radios do put their volume controls on the right hand side of the radio. The bass, treble and volume controls are all on the left front side of the radio. Given the lack of an ALC, and my constant riding of the volume control as I tuned around, it was a nuisance to keep reaching across the radio to turn the knob up or down. Also, the shafts for these controls are very short (about 1/4 inch) and I have a concern about the knobs falling off over time.



Overall, signal sensitivity appears to be very good for a receiver in this price category, and there are some other neat features I like on the 750. But several of the other issues may make these points moot to some. Time and the marketplace will be the final determination whether the Grundig Satellit 750 lives up to its billing as the new flagship of the Etón receiver line.

## FEATURES/SPECIFICATIONS

- Serial Number: S750808000214
- Manufactured in China
- Frequency Coverage: Longwave 100-519 kHz; AM 520-1710 kHz (US/Canada)/522-1620 kHz (selectable); SW 1711-30000 kHz; FM 87.5-108.0 MHz (US/Canada)/76-108 MHz (rest of the world); Airband 118.0-137.0 MHz
- Tuning rates
 

	FM	AM	SW	Air Band	SSB mode
Fast	1 MHz	10 kHz	5 kHz	.025 MHz	5 kHz
Slow	.01 MHz	1 kHz	1 kHz	.001 MHz	1 kHz plus manual tuning with BFO
- Selectable 9/10 kHz AM broadcast band tuning steps
- Selectable/tunable Single Side Band (SSB) reception
- Auto/Manual/Direct frequency key-in and station memory tuning
- Control knobs: Bass, treble, volume, SSB BFO, squelch, RF gain
- Antenna Attenuator: 0/-10/-20 dB
- Auto Tuning Storage function (ATS) for AM/FM/LW
- 1000 station memories (50 memories (MW/LW) 100 memories (FM/SW/SSB), and 500 customizable)
- Bandwidth button: Wide/narrow selections for all bands except Air
- Dual alarm clock function
- Audio: 4 inch, 8 ohm speaker at 2 watts audio output
- External audio jack: 1/8 inch (3.5 mm) stereo reception
- Power consumption: 80 mAh (without backlight)/90 mAh (with backlight)
- Power: Four alkaline D size (UM1) 1.5 volt batteries or four 1.2 volt rechargeable batteries; and AC/DC wall wart: 120VAC/6VDC 500 mA center pin = negative polarity
- 3.5 mm line in jack on front of the unit that will enable you to use the radio speaker for MP3 playback)
- Left/right RCA line out jacks (radio broadcasts can be transferred to recording device/audio amplifier)
- External antenna jacks: External 50 ohm BNC jack for FM External 50 ohm BNC jack for SW External 50 ohm 3.5 mm jack on the ferrite antenna for AM reception External 500 ohm (nominal) antenna clips for a random wire antenna (red clip) and ground connection (black clip)
- Internal whip antenna for FM/SW reception
- 360 degree rotatable ferrite antenna for AM/LW reception
- Internal/External antenna switch (LCD display indicates what position that switch is in)
- Dimensions: 14.65"W (372mm) x 7.21"H (183 mm) x 6.02"D (153 mm)
- Weight: 5.9 lbs (2.66 kg)
- Includes owner's manual, warranty card
- One year parts and labor limited warranty (North America) and two years parts and labor limited warranty (Europe)