

Electra Tiger Scan TSA

Our scanner collection is full of Electra Bearcat BC-Ls (fig. 4), BC IIIs, BC-101s, BC20/20s, BC-250s, BC-300s, and other Electra models, most built in the USA. If you enjoyed scanning thirty years ago, Electra should be a familiar name. Electra Corp., a small Indiana firm, developed the classic Bearcat line of scanner radios. James (Al) Lovell founded Electra Corporation in 1964. The company grew and was bought by Masco seven years later. Uniden bought the Bearcat scanner line in 1984.

While other scanner manufacturers were slow to innovate, Electra is known for their "Yankee ingenuity."

It was evident in the BC-100 (fig. 5), the first handheld programmable scanner and in new features like per-channel rescan delay, service search, and auto store.

Innovation runs in the Lovell family. James Lovell's son Dave restarted Electra Corporation in 1991, concentrating on industrial electronics. Carrying on the family tradition, the reincorporated Electra is back in the scanner business with the Tiger Scan TSA (fig. 1). It was introduced at the 1999 Dayton Hamvention and demonstrated at public safety shows across the country.

The TSA is a bare bones, VHF-high band scanner which sells for about \$70. It has no knobs. All functions are controlled by three pushbuttons and status is displayed on a pair of bright red LEDs.

It has a built-in service search covering seven NOAA weather frequencies and you can program two NFM channels in the 136 - 174 MHz range. The TSA powers up in the NOAA weather radio search mode. One pushbutton cycles the TSA through four options: NOAA weather search, monitor channel 1, monitor channel 2, or scan both channels 1 and 2.



Figure 1. Electra Tiger Scan TSA

The frequency programming procedure is novel. Instead of a VFO or numeric keypad, you tap each frequency digit using a single pushbutton akin to a telegraph key, waiting for a confirmation tone after each digit.

The specification sheet does not list the tuning step size. When I program 165.2375 MHz, the TSA reads back 165.237 MHz but is actually tuned to 165.235 MHz.

The squelch is automatic and you have no control over it. The squelch threshold of our radio (S/N 137213) measures 12 dB quieting.

One pushbutton controls the volume, an arrangement unique to the TSA.

The audio level defaults to a pre-



Figure 2. Tiger Scan uses surface mount components on a single board.

set level each time you power on the TSA. For more volume, you press and hold the pushbutton. The radio gets louder until you release the pushbutton. If you press and hold the pushbutton again, the volume will decrease. The direction of the volume reverses with each press of the pushbutton, a counterintuitive arrangement. This leads one to crank up the volume by accident when you want to soften it instead!

A stiff, plastic covered helical antenna protrudes about 2-1/2" from the TSA. It is glued to the top panel and soldered to the printed circuit board (fig. 3), so it cannot be removed without

surgery. This precludes connecting the TSA to a signal generator to perform sensitivity and image rejection measurements.

A subminiature (3/32") jack atop the TSA can be used for an earphone. An optional charger plugs into the same jack when the TSA is fitted with rechargeable batteries.



Figure 3. Permanent 2-1/2" helical antenna is glued to the top panel and soldered to the circuit board.

❖ Quality and Performance

An old adage says first impressions can be deceiving. My first thought upon seeing the TSA in its blister packaging was "here's another cheap electronics gadget dressed in chintzy black plastic." In fact, the TSA is housed inside a sturdy plastic clamshell case. It feels solid and doesn't flex when squeezed. The bottom is rounded so the TSA cannot stand up on its own. The top panel appears to be made from glass epoxy circuit board material painted black on one side.

The TSA frequency coverage is specified as 136 - 174 MHz, but we can program and receive signals in the 130 - 179.995 MHz range. The firmware would not permit programming frequencies outside these limits.

The permanent antenna prevents us from measuring the TSA's SINAD sensitivity. In actual use, our TSA is noticeably more sensitive than our ICOM IC-R2.

Our radio breaks into oscillation near 155.58 MHz, a local police channel. We can actually hear the oscillation generated by the TSA in another receiver if we position the second receiver near the TSA. Placing a hand near the TSA's



Figure 4. Early Electra Bearcat BC-L scanner. Note the lack of channel lockout switches.

antenna temporarily stops the oscillation. When contacted, Electra offered to replace our TSA under warranty.

Our TSA beats our IC-R2 in the audio arena, too. The TSA internal speaker (fig. 2) produces clear, crisp audio and is significantly louder than my ICOM IC-R2.

As mentioned earlier, you have no control over the squelch level. Our TSA emits a moderate length noise burst at the end of each transmission. Weak signals have a tendency to open and close ("pop") the squelch rapidly and the squelch action would be improved with more hysteresis.

The one page specification sheet does not list the IFs (intermediate frequencies), but lab tests reveal IFs of 10.7 and 0.455 MHz.

Our TSA's power requirements are meager - only 17 mA while scanning. There's supposed to be a low battery voltage warning system, but it doesn't activate when powering our TSA from



Figure 5. Electra Bearcat BC-100, the first programmable handheld scanner

a lab power supply and gradually reducing the voltage. We can receive the NOAA weather radio signal as long as the power supply voltage exceeds 5 V.

❖ **Accessories**

Electra Corp. sells accessories for the TSA. The \$19.95 padded carry case is impressive (fig. 6). It is made in USA of a Cordura-type material. The top is open and an adjustable strap fastens over the top of the Tiger Scan to hold it in. A spring steel belt clip holds the case to your belt or sun visor. What a refreshing change from the thin, overpriced "glove" cases sold for imported scanners!

Electra offers other options, like an earphone (\$9.95), wood and metal desktop stands (\$9.95), and a rechargeable battery (\$24.95).

❖ **Bottom Line**

The Tiger Scan TSA is limited due to being a single band, 2 channel scanner. That's no surprise if you've read anything about the TSA. What is surprising is how well it's built, its good sensitivity and outstanding audio quality. We like the 9 volt battery operation, but wish for improved squelch action.

The TSA is well suited to volunteer firefighters, emergency service workers, businesses, and others who have an interest in monitoring a couple of VHF frequencies without spending a lot of money. We use it for monitoring a ham radio repeater and a public safety channel.

Electra plans to introduce a UHF model sometime soon.

❖ **Vintage Scanners**

If you are interested in collecting or using older vintage scanners and monitor receivers, check out the new "vintagescanners" email list at <http://www.onelist.com>.

Brett Miller, N7OLQ, collected photo images of older scanners and placed them on his web pages, <http://N7OLQ.home.att.net/Radio>. If you have a photo image of an old scanner or



Figure 6. TSA shown in its optional carry case.

monitor to contribute and the photo is not copyrighted, send it to Brett at brett.miller@intel.com.

Measurements

Electra Tiger Scan TSA Scanner
S/N 137213

List price \$69.95 plus \$6.95 shipping and handling
Electra Corporation
11915 E. Washington St.
Cumberland, IN 46229-2951
tel. (317)894-3329
email: electra@tcon.net
www.electra.com

Frequency coverage (MHz):
130 - 179.995 (5 kHz steps)

Squelch threshold: 12 dB SINAD

Intermediate Frequencies (MHz):
10.7, 0.455

Power requirements: 9 VDC battery
off: 2 uA
manual: 17 mA
scanning: 17 mA
full volume: 100 mA
low voltage warning: none detected

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