

## GRE PSR-700 Review

By Bob Grove, W8JHD

Two remarkable, new scanners have been released in the past few months. First came the Uniden HomePatrol-1™, quickly followed by the GRE PSR-700 EZ Scan-SD.

Both scanners offer painless programming by including massive factory-loaded memory which can be retrieved by entering your location. We recently introduced the HomePatrol to our readers (October 2010); now let's take a look at the PSR-700.

### ❖ Simple Styling

A quick look at the front panel of this hand-carried portable reveals its elegant simplicity. There is no keypad, only a navigational button to allow left/right menu selections and up/down volume control. Operation is intuitive, especially when considering the unfamiliar control process.

The other press keys allow such function selections as SKIP to temporarily avoid specifically-selected channels during scan and search sequences; A SELECT/PAUSE button to enter your choices and stop the scan/search sequence; a weather key for instant access to your local NOAA weather broadcast; a POWER ON/OFF key which has a secondary backlight function; and the all-important menu button for setting up your preferences for the scanner's operation.

A squelch knob is on the top of the case alongside the whip, as is an earphone jack for private listening or noisy environment monitoring. A rubber flap on one side protects a POWER ON/OFF switch which prevents accidental activation during transport and also prevents battery drain by keep-alive circuitry during long periods of nonuse.

Another flap on the other side protects a connector for the included USB PC interface cable.

### TECH SPECS

**Modes:** AM and narrow FM  
**Frequency steps:** 3, 12.5, 5, 6.25, 7.5, 8.33, 10, 12.5, and 25 kHz  
**Selectivity (-6/-50 dB):** AM (25-28 MHz), 4/6 kHz; FM (elsewhere) 7/13 kHz  
**Circuit design:** Triple conversion, PLL-synthesized superheterodyne  
**Antenna input:** BNC connector, 50 ohms nominal impedance  
**Power required:** 2AA cells or 5VDC @ 120 mA (nominal) through its USB cable  
**Operating temperature:** 14-140 degrees Fahrenheit (-10 to +60 degrees C.)  
**Case dimensions:** 5-inches H x 2-1/2-inches W x 1-inch D  
**Weight:** 6-1/2 oz.

The 700 is powered by two AA cells (not supplied), either alkaline or rechargeable NiMH. An optional DC cable is available to charge/power the radio in a mobile environment, as is an optional AC adapter for long-term fixed use and battery charging.

The owner's manual is on a CD-ROM which also includes the USB cable driver and the PC application software. A quick-start, folded-paper guide handily walks folks like me who hate to read manuals through the loading and selection process. I found the 700's on-screen menu very easy to follow without the instructions.

### ❖ Choices Galore

The hand-held scanner comes with a 2GB SD memory card loaded with the United States and Canada's most-sought frequencies, typically law enforcement, aircraft, local and federal government, fire and medical as well as other services present in the database.

The database is provided by a private source, [radioreference.com](http://radioreference.com), and is updated and augmented on an on-going basis, available on line at no cost, as is the operational software.

The frequency ranges covered are 25-54, 108-174, 216-512, 764-797, 806-960 (less cellular), and 1240-1300 MHz (less cellular).

A service search allows you to poll for activity in specific frequency ranges which are FCC-allocated for the service of your choice, even if an active frequency is not currently listed in the pre-programmed database.

A more comprehensive search is accomplished in the conventional fashion by selecting start and stop frequencies, then automatically and rapidly stepping through the selected bandwidth looking for activity.

Frequencies can be programmed to sound an alarm when activated if you are particularly interested in certain channel activations.

The high-contrast, backlit LCD features a highly-informative alphanumeric readout which can be edited by the user; it shows a bargraph-style signal-strength indicator.

Since trunked radio systems are widespread and growing, especially in metropolitan areas, the 700 tracks analog (not digital) Motorola, EDACS, and LTR systems, both for talk groups and individual communications. It also has decoder circuitry which identifies and displays CTCSS subaudible tones and DCS squelch system codes, but it does not have P25 decoding.

P25 digital modulation is growing widely throughout the country, mandated for intersys-



tem use between public safety agencies, and it is regularly incorporated into trunking systems. However, the cost for licensing and software-implementing it in a scanner is consequential, and the PSR-700 is intended to be an easy-to-use, inexpensive scanner; thus, no P25.

The NOAA weather mode provides SAME local weather alarm features with All Hazards signal decoding. An additional feature is SKY-WARN storm spotter monitoring.

A handy Spectrum Sweeper function finds nearby transmissions automatically in any band covered by the database, even if the frequency is not currently included in the listed database. Just as with scan and search functions, unwanted frequencies can be skipped by a simple press of the SKIP key if captured during the sweep.

Users of other scanners may have noted that frequencies shown during this type of automatic detection are not always displayed accurately. The 700 employs a selectable "Zeromatic" circuit which can be invoked to accurately display the intercepted frequency.

### ❖ The Bottom Line

I found the new GRE PSR-700 intuitively easy to use. The ability to simply turn it on fresh from the factory and push-button select listening targets is very satisfying.

The supplied whip is shorter than those found on most competitive scanners (including other GRE models), which slightly reduces reception range, but if this is an issue, replace it with a high-performance whip like the remarkable Condor). ([www.grove-ent.com/ANT14.html](http://www.grove-ent.com/ANT14.html))

The wide-coverage frequency range is inclusive for virtually any VHF/UHF scanning application, including CB, ham radio, public safety, civilian and military aircraft, government, marine, racing, and more.

Audio power to the internal speaker is 300 mW, loud enough for most listening environments, and it is crisp and clear. Its 10% total harmonic distortion (THD) is devoid of the obstructive distortion commonly encountered on some other handhelds. The convenience of

a conventional 1/8-inch earphone audio jack allows that option if the situation demands it.

I did miss the presence of a convenient barrel-style DC jack rather than the USB port we've all become familiar with. And the absence of P25 digital demodulation is disappointing

with its widespread use, but I understand the cost issue.

It does not come with a belt clip, but an endless choice of holsters for today's pocket electronics is available at stores everywhere.

All told, this is a feature-packed, wide-

frequency-coverage, easy-to-use, hand-held scanner that sells for just under \$200, and that's remarkable, indeed.

The GRE PSR-700 (SCN-56) sells for \$199.95 plus shipping from Grove Enterprises (1-800-438-8155 or [order@grove-ent.com](mailto:order@grove-ent.com)).

# SafeCeiver Mini-Scanner

By Bob Grove, W8JHD

Yes, it really is this small, and yes, it really is a scanner!

The SafeCeiver was designed as a convenient emergency notification device that can be worn quite inconspicuously. It comes with a secure, low-profile, clear plastic holster with a tight belt clip that just won't let go! The holster is open to reveal the display and to access the four control buttons.

Its compact size and effortless weight makes it a dandy, low-cost substitute for expensive pagers. It has a particular appeal to fire departments, hospitals, emergency medical personnel, school campus security, and roving plant managers. It is best suited for coordinating emergency teams on the scene of fires and explosions, as well as search and rescue/recovery operations.

The SafeCeiver is well adapted for addressing a group such as in coaching, training, crowd control, and event security. It would also be useful for staging and coordinating large productions like concerts, parades, re-enactments, and theater spectacles. It would make a great visitor information monitor for museum exhibits and for the hearing impaired at public events.

A very popular application is for motor sport events; spectators can tune in to hear driver-to-pit-crew communications during races. As a matter of fact, the first version of the SafeCeiver was given the 2005 Bobby Isaac award for the most innovative product in NASCAR's short track program. More than 200 track circuits and series in five countries use the UHF version.

## ❖ Two Models Available

Two models of the SafeCeiver are currently available: the EV25 (151.000-163.495 MHz, 2500 channel search steps at 5 kHz per channel); and the EU16 (450.000-469.9875 MHz, 1600 channel search steps at 12.5 kHz per channel). I elected to review the V25, since most of my local public safety agencies utilize VHF high band.

Up to five channels may be stored in memory and scanned within one second. Activity on any channel stops the scan sequence, then automatically resumes two seconds after the signal drops out.

Conventional squelch provides effortless listening, but the squelch can be defeated for weak-signal monitoring if necessary. At least 20 hours of continuous operation can be expected from a rechargeable AAA cell (not provided). If more convenient, the unit will operate from a conventional AAA alkaline cell.

Four levels of audio can be stepped by the

function buttons, from comfortable, quiet environment to ear-splitting volume that can drive a speaker! This is a convenient alternative if someone opts to use the SafeCeiver without the earphones for a period of time, but doesn't want to miss a call. The 1/8-inch (3.5 mm) earphone jack can be connected to either a stereo or mono earphone or speaker.

## ❖ Let's Try It Out

Any teensy, yet high-powered device holds immediate appeal for me. I inserted a AAA cell into the appropriate slot in the back of the receiver; a secure, durable slide holds it in place, and a lock prevents it from accidentally coming loose. An ON/OFF key is pressed for three seconds to activate the unit. (Hold for five seconds to turn it off.)

It didn't take long to get five of my local public safety frequencies entered into memory. The large LCD is bold and can be read satisfactorily from a variety of angles except from above.

Legends on the display show the tuned frequency in megahertz (readout to 5 kHz on the EV25 and 500 Hz on the EU16) and channel number; a busy icon indicates signal being received; a squelch icon shows that function has been activated; and a bar graph that shows the level of audio selected.

Since the little scanner has only four buttons, obviously they multitask. This takes some getting used to, but it isn't impossible. Some buttons respond to holding versus tapping, and some are simultaneously held in tandem (two buttons at a time) to select various functions. An illustrated instruction sheet is provided to familiarize the new owner with the functions and key presses.

Channels may be scanned or manually selected. The total top-to-bottom frequency range can be auto-searched to find activity. Four of the five channels are dedicated for fixed-frequency memory; the fifth is like the VFO channel on typical scanning receivers; the frequency remains stored unless it is changed by tuning across the receiver's operating spectrum.

I conducted my test of my EV25 during an outdoor festival being held in a nearby town. I ventured through the crowd with the inconspicuous scanner attached to my belt and a lightweight ear bud in my ear.

The friendly sounds of the



crowd surrounded me, but as the sheriff's calls went out, I heard those clearly, as well as the fire department transmissions. Even while talking with people I knew, no one seemed to notice the unobtrusive monitor or earphone.

## ❖ Signal Range

The SafeCeiver is very sensitive – 0.2 microvolts. But, because the SafeCeiver is intended for close-in operation, there is no protruding whip, the antenna is built in. This limits its reception range. The manufacturer says that a conventional five-watt hand-held radio should be detectable 2-3 miles away, and that base stations and repeaters should be receivable for 15-25 miles.

That's probably true for flat unobstructed terrain, but I live in the mountains. I found that repeaters five miles away would dependably break squelch, but that the steep terrain caused some breakup in reception at distances in excess of that.

Defeating the squelch would allow weaker signals to be heard, but the constant background hiss would become distracting and fatiguing. Since the SafeCeiver is targeted to receive close-by signals, distant reception is not a consideration.

## ❖ Speaker Operation

Substituting an 8 ohm loudspeaker for the 32 ohm ear bud provided easy listening close in, and stepping up the volume produced amazingly loud sound – all from a 1.5 volt battery! But with maximum sound (volume step 4), some distortion became evident from the speaker. Not a problem: step 3 provided room-filling volume with no distortion.

To be fair, the low speaker impedance most likely forced the audio stage to operate in excess of its design limit. A higher impedance speaker would likely sound much better.

## ❖ The Bottom Line

It doesn't track trunking and it won't hear P25 digital modulation, but for listening to important conventional, local signals when the ultimate in portability or privacy is desirable, this little scanner can't be beat. It comes with a battery and an ear bud. And the price is right.

The EV25 or EU16 sells for \$129.95 plus shipping from SafeCeiver (8809 C Augusta Road, Pelzer, SC 29669); Phone 1-864-243-0254, or order on line [www.safeceiver.com](http://www.safeceiver.com).

