SENTRY PROBE, personal security device using RADAR

by Jay Salsburg

4 backers

$451 pledged of $25,000 goal

17 days to go

Back This Project

★ Remind me

This project will only be funded if at least $25,000 is pledged by Mon, Mar 9 2015 4:00 AM EET.

SENTRY PROBE sees movement of people through doors and walls; uses penetrating RADAR, continuously for hours. Jay Salsburg

About this project

SENTRY PROBE

Hello, my name is Jay Salsburg. I am an Electronics Engineer specializing in RADAR Science; the sole developer of SENTRY PROBE, a personal security device using RADAR, ongoing for 8 years in secrecy until now. SENTRY PROBE has evolved over the years and is finally a portable, handheld device. With your help, together we can bring this new technology to the public.

Rewards

Pledge $25 or more

Your contribution goes toward owning your very own SENTRY PROBE.

Estimated delivery: Feb 2016
Only ships to: Canada, United States

Pledge $25 or more

Your contribution goes toward owning your very own SENTRY PROBE.

Estimated delivery: Feb 2016
Only ships to: Canada,
SENTRY PROBE continuously reports hidden movement (people) through doors and walls with a beeping sound, or may be switched to silent mode using only its LED without the beeper. Ask yourself “Why would anyone want such a thing as this?” SENTRY PROBE puts penetrating Doppler RADAR small enough to be carried in your pocket, just like a Smart Phone puts a telephone in your pocket. SENTRY PROBE is pocket-sized, portable, hand held, and low-cost. SENTRY PROBE is meant to detect an intruder without their knowledge. To dismiss the issue of microwaves, a cell phone emits 100 times more microwave energy. SENTRY PROBE uses very low power Doppler RADAR motion detection. Its excellent sensitivity to low level RADAR is achieved through clever Electronic Engineering. SENTRY PROBE detects human movement both in direct contact or at arm’s length from the surface of interest. Hidden movement is reported unattended without interruption, occurring in the field of view of the RADAR; a pattern of detection much like that of a floodlight. Most residential doors and walls are semi-transparent, like shower door glass, to SENTRY PROBE. All SENTRY PROBE has to do is detect someone approaching the door or wall before they reach it, which SENTRY PROBE does very well.

The term “situation awareness” is used by Military and First/Emergency Responders to convey the sense they get from reliable information when encountering hazard or danger. With SENTRY PROBE, you and they can continuously maintain immediate situational awareness of anyone invisibly moving behind a door or wall of
interest.

I first had this idea in the late 1970s, that of using RADAR to detect people moving behind closed doors, when I bought a Security System for my home. It had a new device in it that used RADAR to detect motion. I noticed the alarm would falsely trigger when someone came to the front door, before the visitor knocked on the door. The RADAR devices available then were too large and cumbersome to make a practical device that would fit in your pants pocket, hand bag, or glove compartment. Today, the huge advancements in new electronics technology has made miniature “Personal RADAR” possible. With your help, SENTRY PROBE may be significantly reduced in cost and size, improved in detection sensitivity, increased in efficiency, and include added functions. The prototype detects motion continuously on a single 9 volt battery for several hours which will improve using inexpensive rechargeable lithium Cell Phone batteries. The target operating time is 24 hours on a single charge.

Movement generates distinctive sounds emanating from SENTRY PROBE which is instinctively interpreted as movement easily heard even in noisy situations. It may be hand-held, hung on a doorknob for unattended alerts, placed on the ground/floor, mounted on a tripod with its built-in camera mount, suspended on a pole for scanning through high windows, walls and roofs, extended into places that are hazardous, even mounted on a robot or drone. If you are required to detect movement in sensitive situations or through choke points, SENTRY PROBE can warn you if there is any movement, especially in complete darkness.

SENTRY PROBE detects movement:

Through walls of adjacent rooms and buildings

Through floors, ceilings, and roofs

Through windows with curtains and blinds

In blind hallways

Around corners

From inside to outside

From outside to inside

From inside to outside to inside (Inside one room or building to inside another room or building.)

SENTRY PROBE can alert you of anyone moving in a sensitive area like your driveway, carport, porch, dark area, behind closed doors, or through walls. Hunters in the wilderness and Pest Controllers inside buildings can use SENTRY PROBE to detect animal movement in areas of interest or through walls especially in complete darkness; detects deer, rabbits, rodents, possums, squirrels, and raccoons in a crawl space, attic, behind and under furniture, or outside.

### SENTRY PROBE Timeline

<table>
<thead>
<tr>
<th>Version</th>
<th>Stage</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Q1, 2015</td>
<td>Production and delivery.</td>
</tr>
<tr>
<td>1.2</td>
<td>Q4, 2015</td>
<td>Production and delivery.</td>
</tr>
<tr>
<td>1.3</td>
<td>Q1, 2016</td>
<td>Assembly of production units begins.</td>
</tr>
<tr>
<td>1.4</td>
<td>Q2, 2016</td>
<td>Order fulfillment begins with ‘Packaging and Handling’ for shipment.</td>
</tr>
</tbody>
</table>

**Proposed modifications, enhancements, and upgrades of initial prototype:**
- USB/Lithium battery charger integration
- CAD of miniaturized surface mount components
- Sub for smaller package (5", 2.5", 0.67")
- Boost RADAR Power
- Bill of Materials / Suppliers
- Outsourcing fabrication

---

**Working Prototype 02/2015**

[Link to Kickstarter page](https://www.kickstarter.com/projects/127335135/sentry-probe-personal-security-device-using-radar)
Risks and challenges

Prototype of Version 1.0 is finished as seen in the demonstration videos. Without any modifications to the electronics of this prototype as is, it may be manufactured for delivery without any changes to the electronics.

The only electronic option left undone is applying a reliable rechargeable battery and charging system to the design. This prototype affords easy upgrading using off-the-shelf Cell Phone-like charging such as with the popular Micro USB. The Cell Phone battery upgrade is not yet integrated into the prototype and Packaging the new miniature design for production, a purely mechanical process not affecting the RADAR operation.

Preliminary advance to Miniaturization... Being that the prototype is not miniaturized, a miniaturization Cycle of the electronics’ design using surface mount components will allow significant reduction in the size and increase in efficiency and ruggedness of the final design of Version 1.0 pushing its designation to Version 1.1.

When Version 1.1 is created, the final design can move to being Packaged. In my CAD Laboratory, applying 3D Printing or off-the-shelf enclosures will make this step efficient and cost effective, pushing the design to Version 1.2.

The Version 1.2 design will commence the “Mass Production Phase.” For 100 units or more; Ordering production quantities of Enclosures, Electronics,
Batteries, and fastening hardware, bringing the project to Version 1.3.

Assembling Production units begins, bringing the project to Version 1.4.

Learn about accountability on Kickstarter

FAQ

➤ How does SENTRY PROBE detect movement through most Doors and Walls.
SENTRY PROBE uses Doppler RADAR effectively penetrating most residential building materials; gypsum wallboard, wood, fiberglass insulation, and brick, not metal or concrete. Even though some residential buildings use metal doors, the wall next to the door is usually constructed of conventional materials which are semi-transparent to SENTRY PROBE's RADAR.

Last updated: Sun, Feb 8 2015 5:31 PM EET

➤ Detects motion forward only.
SENTRY PROBE reliably detects people moving only in forward direction from SENTRY PROBE. SENTRY PROBE’s forward direction is used to penetrate walls and doors. This unique feature allows SENTRY PROBE to be left unattended on a wall or door, penetrating that surface of interest, without unwanted detection of motion from behind SENTRY PROBE. The user may move in the vicinity behind SENTRY PROBE, without it detecting your movements.

Last updated: Sun, Feb 8 2015 5:31 PM EET

➤ SENTRY PROBE detects people moving 10 feet from (through) solid core doors.
Solid core doors are made of wood and gypsum. SENTRY PROBE's RADAR will detect a person approaching a solid core door as much as 10 feet from

the door. A person walking parallel to the door is detected 6 feet from the door. SENTRY PROBE will reliably and continuously detect a person moving more than 2 arms length from the door for several hours. Any movement close to the solid core door is detected very well. Slight movements, like finger and hand movement, are detected around the door’s knob.

Last updated: Sat, Feb 7 2015 9:06 AM EET

Continuous movement detection for hours on single charge.
The current version of SENTRY PROBE uses a single 9 volt battery which will operate SENTRY PROBE continuously detecting movement for several hours. One of the most important upgrades this Kickstarter campaign will finance is the application of a conventional Cell Phone battery and charging system to power SENTRY PROBE. The target continuous operating time is 24 hours on a single charge. The option of Cell Phone-like power will allow SENTRY PROBE to be continuously powered and/or charged with an external Cell Phone power supply.

Last updated: Sat, Feb 7 2015 9:06 AM EET

Detects people moveing in the clear 30 feet away.
When SENTRY PROBE is operated in the clear, that is, with nothing but air between SENTRY PROBE and the motion of the object or subject of interest, SENTRY PROBE will detect a person moving more the 30 feet away. Automobiles and other vehicles are reliably detected much farther away than 30 feet. Since SENTRY PROBE includes a standard Camera Tripod mounting nut, it may be easily mounted for convenience, especially in situations of complete darkness, an attractive tool for Combatants and Hunters. By placing SENTRY PROBE facing a choke point, even in complete darkness, slight movement will be detected.

Last updated: Sat, Feb 7 2015 9:06 AM EET

Instant Situation Awareness.
Situation Awareness is somewhat of a geeky technical term. Specifically referring to how SENTRY PROBE is used, Situation Awareness (SA) involves being aware of an unseen person who may affect your safety, immediately and in the near future. One with an adept sense of situation awareness generally has a high degree of knowledge, in this case, unaware to the person being detected. Students (on Campus) sometimes find themselves alone in large buildings. A Student may use SENTRY PROBE to notify them if anyone is moving behind a locked door before unlocking the door. First Responders tasked with entering a residence, may use SENTRY PROBE to detect if anyone is moving behind a residential door, one of most dangerous situations a First Responder encounters. Combatants often find themselves in similar situations to First Responders. Combatants also find themselves in situations using SENTRY PROBE, they can know if anyone is moving through choke points or behind walls, even in complete darkness. SENTRY PROBE will notify the Combatant to unattended movement, allowing other tasks to be performed without constant vigilance. Hunters may reliably detect animals moving in complete darkness. Spouses, may be alone or stalked by unwanted pursuers. SENTRY PROBE will detect unwanted activity, unseen and unknown to the perpetrator.

Last updated: Sat, Feb 7 2015 9:06 AM EET

Detects Visitors/Snoopers, unknown to them.
SENTRY PROBE will detect movement of a person or vehicle unknown to the visitor of snooper. For instance, placing SENTRY PROBE in a window alerts you of any movement of a person as much as 30 feet away, and the approach of a car much farther away than 30 feet.

Last updated: Sat, Feb 7 2015 9:06 AM EET

Unattended Constant Vigilance.
One of the most arduous tasks to perform in dangerous

situations is observing a choke point for passage or approach of a person or vehicle of interest. Even in complete darkness, SENTRY PROBE will continuously and reliably detect movement of people and vehicles in, around, and through sensitive locations. SENTRY PROBE’s ability to penetrate walls and doors will allow detection of movement, unknown to those moving, allowing the user of SENTRY PROBE to relax with complete confidence that any activity will be detected.

Last updated: Sat, Feb 7 2015 7:49 AM EET

➤ Puts Penetrating RADAR in your Pocket.
The current version of SENTRY PROBE easily fits in a pants pocket, small hand bag, and the glove box of a car. Proposed miniaturization will make SENTRY PROBE even smaller, lighter, and more rugged.

Last updated: Sat, Feb 7 2015 7:49 AM EET

➤ Autonomous operation, Nothing else needed.
SENTRY PROVE needs nothing but electricity to operate. Power is supplied by its internal battery. No Computers, cables, or external apparatus are necessary.

Last updated: Sat, Feb 7 2015 8:31 AM EET

➤ Detects Snoopers beyond their reach.
The moving person is easily detected by SENTRY PROBE through a conventional solid core door, more than 2 arm’s length from the door. This means the person moving behind the door cannot touch the door before they are detected and unknown to them.

Last updated: Sat, Feb 7 2015 9:06 AM EET

➤ External Power/Charger, Car, Hotel, Bush
With the upgrade of a Cell Phone battery, SENTRY PROBE will be able to operate and be charged by a conventional Cell Phone Power Supply, commonly available in a cars, hotel rooms, and in the Bush or Field for Combatants, Hunters, and Campers.

Protect Valuables; Cars, Purses, Laptops
SENTRY PROBE can bathe an object in its motion detecting Doppler RADAR, creating a zone of protection, alerting to any movement near the object of interest unknown by anyone approaching.

Peace of Mind in Sensitive Situations; Continuous Self Protection.
SENTRY PROBE allows the user to relax from the task of constant vigilance, with its unique ability to be constantly vigilant without the user’s attention.

Pest Control; Crawl Spaces, Attics, Basements, Waste Disposal.
A particularly difficult problem in buildings is the detection of unwanted pests in crawl spaces, attics, and basements. SENTRY PROBE will reliably detect the movement of unwanted animals in these spaces; through walls, ceilings, and wood foundation floors. Unwanted disturbance, for instance by dogs, of disposed waste (garbage cans) may be easily detected, even in complete darkness. Campers can detect marauding animals in search of food.

Efficient Low Power Circuitry
SENTRY PROBE’s circuitry was refined over several years of research, testing, and refinement. Clever electronic design is the reason why SENTRY PROBE can operate continuously for many hours on a single 9 volt battery. With the proposed upgrade for power from a Cell Phone Battery and charging system, SENTRY PROBE will be able to operate much longer and on many different power sources for charging and long-term operation.

Water and Mud Resistant

The current version, is water and mud resistant. The proposed upgrade will allow for a more robust and rugged design, making SENTRY PROBE even more resistant to water and mud. This is especially attractive to First Responders, Combatants, Hunters, and Campers allowing SENTRY PROBE to be used (outside) in hostile environments, carried on person during bad weather and muddy conditions.

Tripod/Monopod Camera Mounting Nut

SENTRY PROBE has a standard Camera Mount. This allows SENTRY PROBE to mounted on a conventional camera tripod. Mounting SENTRY PROBE on an extendable paint pole, will allow high extension to detect movement through walls and windows above arm's reach at ground level; to second and third stories.