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KEEPING SOLDERS OPERATIONAL

A GPS Repeater Unit From GPS Source Enables Military Personnel To Operate Handheld GPS Units And GPS-Enabled Training Equipment Inside Light Armored Vehicles.

In a combat situation, information can make the difference between a successful operation and a failure. GPS is one of the best means of location information for U.S. military personnel, and soldiers rely on it for both training exercises and in battle.

When Army personnel in Ft. Lewis, Washington, began training with GPS-enabled equipment on every soldier -- a system called Land Warrior, which includes an integral computer system, a radio and a rifle-mounted video camera that are all part of an individual soldier's personal equipment carried in combat situations -- they discovered that the GPS equipment stopped functioning correctly when the soldiers entered their armored Stryker vehicles.

Grant Routzohn, Assistant Product Manager for Stryker Integration with the Department of Defense at Ft. Belvoir, Virginia, needed to find a solution. "When soldiers are wearing the Land Warrior systems, their position is displayed on the map in the Stryker vehicles and on the Land Warrior system," he explains. "When the soldier went into vehicle, we lost that connection. The icons representing their position simply stayed in place on the map, even though the soldier wasn't there."

This problem is a well-documented conflict between GPS equipment and the military's armor vehicles. On the flip side, another problem occurs when GPS handheld receivers lose lock inside the vehicle: it can take several minutes to reacquire when the soldier exits the vehicle -- a serious issue on the battlefield when bullets are flying and seconds count.

GETTING ACCURATE DATA

Obviously this situation was unacceptable for many reasons, not the least of which is that soldiers couldn't rely on the data displayed by the GPS systems in the Stryker vehicle and on the Land Warrior system once they entered or exited the armored vehicles. In addition to inaccurate system data, the minutes needed to recover the lost GPS signal once the soldier exits the vehicle could be catastrophic in combat.

In his search for a solution, Routzohn found the GPSRKL1M Military Mobile L1 Repeater from [GPS Source](#). The GPSRKL1M is a GPS L1 repeater system designed specifically for rugged, mobile military environments. The product features a military style cannon plug connector for DC power (Mil Spec 1275B), and comes with a waterproof enclosure as well as the option to proof the enclosure against electromagnetic interference. The GPSRKL1M also features custom gain options to ensure a radiated power level that covers only the required area.



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Routzohn was so impressed with the initial trial that the Army bought 75 units for a Stryker battalion in June 2006, 55 of which are currently being tested on Stryker armor vehicles in Ft. Lewis.

COMPLETE PICTURE OF THE BATTLEFIELD

When installed on the Stryker units, the GPS repeaters enable handheld GPS units and GPS-enabled equipment (like the Land Warrior systems) to continue their data connection in light armored vehicles, thereby providing the soldiers with accurate location data. The soldiers testing the GPS repeaters in Ft. Lewis are already impressed with the results, and they plan to take the units into combat with them when they are deployed sometime in 2007.

"It's made them much more effective in doing their job," Routzohn says about the integration of the repeater units on the Strykers. "It gives them a more complete picture of the battlefield. Plus, it was an easy thing to integrate into the vehicle."

The U.S. Army plans to implement more of the GPS Source Military Mobile L1 Repeater into three Stryker brigades over the next few years -- one each in 2008, 2009 and 2010.

GPS Source developed the GPS repeater solution to enable full functionality of GPS applications within Humvees and light armor. The National Telecommunications and Information Administration (NTIA) has recently established a set of guidelines for allowing low power GPS repeaters for military applications in light armored vehicles within the United States. When deployed overseas, use and operation of GPS repeaters are under the direction of the theater spectrum management.

For more information about the Military Mobile L1 Repeater or to receive a quote, visit the GPS Source [Web site](#).