

Increase GPS Capability without Affecting SWaP

Defense integrator routes GPS signal to new communications equipment without affecting SWaP



The Problem

A leading military communications program was tasked with installing new equipment on certain ground vehicle platforms. The new equipment utilized GPS data, which not only supported navigation, but was essential for data encryption, position reporting, and timing. This required the integrator to route GPS data to several new devices. But, with vehicle platform weight sensitivities and the limited space to integrate new equipment, simply routing cables throughout the vehicle was logistically prohibitive. Also, increasing the number of GPS antennas on the roof proved to be challenging due to other antennas, gear and equipment. The vehicles already had access to GPS, how could they share transmission of the data without affecting their existing systems layout?

The Solution

The integrator for this program consulted GPS Source, who was able to suggest a system that addressed the challenges created by the military. It included a GPS retransmission controller, which efficiently provided L1/L2 GPS signals (both wirelessly and through coax cable) to the new communications equipment. A passive antenna cabled to one of the four output ports provided a means to wirelessly retransmit GPS data to multiple devices enabled with single receive antenna. By selecting key system components to receive coaxial connections, the integrator was able to control the GPS data at exact signal strengths to more efficiently provide the desired communications capability to the Warfighter.

The GPS Retransmission System consisted of a GLI-ECHO II GPS Retransmission Controller, single active (receive) GPS antenna, single passive (repeat) GPS antenna, coaxial cables, and applicable mounting brackets.

By employing the GPS retransmission equipment to compliment the systems architecture, a more efficient solution regarding space, weight and power (SWaP) was made available to the integrator.

GPS Source

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Suggested Equipment

GLI-ECHO II
L1L2 Active Antenna
L1L2 Passive Antenna

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