



CUSTOMER STORY | Dec 2016

# SP80 GNSS Receivers Increase Water Pipeline Survey Efficiency by 160 Percent.

**Athens, on the island of Euboea**, Greece's second largest island lying just off the coast of Athens, surveys for two legs of a new water pipeline were recently completed with remarkably different efficiencies. The difference, according to the lead survey engineer, Epameinondas Valtinos, was directly attributable to Spectra Precision's highly efficient SP80 GNSS receiver.

The 155 km first leg used three conventional GNSS receivers and a total station, was completed in 25 days for productivity of 6 km per day. The second 75 km leg was completed in seven days using just two Spectra Precision SP80 GNSS receivers and a total station for productivity of almost 11 km per day – almost doubling survey speed. Both legs traversed rugged, heavily forested and mountainous terrain. The second leg with even denser foliage and semi-urban sections made it more difficult than the first leg, according to Valtinos. It had been estimated that the second leg would take 14 days, but because of the efficiency of the SP80's, it was done in half the estimated time, and importantly, with fewer personnel. The first leg using conventional GNSS receivers employed seven people, one base and three rovers.



## Highlights

- Pipeline legs traversed rugged, heavily forested, mountainous terrain and foliage and semi-urban.
- Overall efficiency gain of 160 percent.
- SP80 receivers were much quicker to fix positions and better able to store more points under trees in difficult environment.
- The lightweight of the SP80 helped to improve job speed.



While the second leg employing the SP80 required only five people, plus one base and just two rovers. The SP80 yielded an overall efficiency of 5.35 km/person/day compared to 2.06 km/person/day for the conventional GNSS receivers — for an overall efficiency gain of 160 percent.

Compared to the conventional GNSS receivers used on the first leg, “the SP80 receivers on the second leg were much quicker to fix positions and better able to store more points under trees in difficult, heavily-forested terrain and between buildings in densely populated areas to reduce delay,” said Valtinos. In addition, the need for the total station was almost completely eliminated “because the SP80 was so efficient in taking measurements to building corners and under trees, it dramatically reduced the use of the total station to further cut time on the job.”

The lighter weight SP80 also helped improve job speed, noted Valtinos. The new pipeline will connect a new dam, Seta Manikia, currently under construction, to provide municipal water service to new areas of the island. The Spectra Precision dealer in Greece, JGC, provided sales support and technical training to the survey team headed by Epameinondas Valtinos.



## About

### About the SP80 GNSS Receiver

The SP80 uses Z-Blade processing technology running on a next generation Spectra Precision 240-channel 6G ASIC that fully uses all six GNSS systems: GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS. The unique GNSS-centric capability combines GNSS signals without dependency on any specific GNSS system; allowing operations in GLONASS-only or BeiDou-only mode. The SP80 also has a unique combination of communication technologies including an integrated 3.5G GSM/UMTS modem, Bluetooth, Wi-Fi connectivity, and optional internal UHF transmit radio. The cellular modem may be used for SMS and e-mail alerts as well as regular Internet or VRS connectivity. The SP80 can also connect to the Internet from the field using Wi-Fi hotspots, where available.

### About JGC Geoinformation Systems S.A

Founded in 1999, JGC has become one of Greece’s leading marketers of professional GNSS systems and optical surveying instruments serving more than 5,000 clients, including government departments, public local authorities and utilities, construction and consulting firms, telecommunications companies, universities, military services and professional engineers.

### About the Spectra Precision Brand

Spectra Precision is an established brand known for delivering quality products to the construction market. Focusing on the specific needs of the conventional surveying market, the Spectra Precision brand offers a complete product portfolio including Global Navigation Satellite Systems Geographical Information Systems, optical total stations, data collection hardware, field and office software, as well as a wide range of construction tools. Spectra Precision surveying equipment is an economical choice that utilizes technologies for optimal efficiency. With convenience and reliability as the foundation of the Spectra Precision brand, it is an ideal choice for value. The Spectra Precision brand is backed with the strong technical support that users have come to expect from a quality name in surveying and construction.

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