RTK-GPS with low-cost single-frequency receivers: performance evaluation, problems and these solutions

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RTK-GPS (Realtime Kinematic GPS) is precise positioning technology with cm-level accuracy using GPS signals. As to the RTK-GPS, it has been said that dual-frequency GPS receivers and high-performance antennas are necessary. However, these receivers and antennas are currently so expensive that the RTK-GPS is not widely used. If low-cost single-frequency receivers were available for the RTK-GPS, the precise positioning would be enhanced to more general applications. In this study, I evaluate the RTK-GPS performance with low-cost single-frequency receivers and clarify the problems for practical performance with the RTK-GPS.