

A REVIEW: PERFORMANCE EVALUATION OF LOW-COST RECEIVERS UNDER DIFFERENT ENVIRONMENTS FOR CADASTRAL SURVEYS

S.L.Witharana*, N.M.P.M.Piyasena, P.A.D.V.Vithanage, M.A.T.S.Munasinghe, A.I.U De Silva
Department of Surveying and Geodesy, Faculty of Geomatics, Sabaragamuwa University of Sri Lanka

** slakshan4@gmail.com*

Abstract

Currently, geodetic receivers with high specifications for real-time data acquisitions, are marketed for an enormous price which is unbearable for most users. Hence, as a solution, a series of high-precision positioning products were developed with the capabilities of providing carrier phase measurements and the original observation data at a low cost for high-precision satellite positioning. These receivers allowed the user to acquire more signals through channels from more satellites for time-to-first-fix in kinematic applications thus, satellite positioning has become less difficult to realize, and it was achieved by the manner of Real-time kinematic (RTK), Precise Point Position (PPP) and static relative positioning methods. But was very prone to noises which caused errors. To optimize the quality of measurements, Signal to Noise Ratio (SNR) constraints must be set and receiver noise level is detected by zero baseline or ultra-short baseline comparison. With a thorough literature survey it can be concluded that, the aforementioned GNSS receivers can perform better in most areas with strong signal strength. Even in some areas with weak signal strength, centimeter and sub-meter levels of accuracy can still be obtained for cadastral surveys.

Keywords: *low cost receiver, SNR, RTK, Accuracy, cadastral survey*