

This paper presents a comprehensive set of propagation measurements taken at 900/1800 MHz in Bauchi, Nigeria, to validate the applicability of some popularly used empirical models for mobile network design in the environment. The results show that the Egli and Hata suburban models provide close predictions for base stations, BS1, BS3 and BS4, thus supporting the use of these two models for future network design or system expansion in suburban areas of Bauchi town and other environments with similar features. However, BS2 typifies an open area as the Hata open area model gave the best prediction with absolute mean error (m), standard deviation (s) and root mean square error (rmse) values of 5.6 dB, 4.8 dB and 7.25 dB respectively at 900 MHz and 7.7 dB, 6.5 dB and 10.10 dB at 1800 MHz.