

Parameter analysis of propagation attenuation characteristics for 1-6 GHz in the open environment

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Since the 1900s, the demand for radio resources has increased rapidly. Therefore, frequency is considered to be an important resource in various industrial fields in the future. As a result, the need for a frequency management policy has increased in order to use frequencies more efficiently. In this situation, studies are conducted to estimate the economic value of the frequency.

In this paper, the attenuation characteristics of frequency (1-6 GHz) in the open environment are simulated to study the characteristics of frequency. The simulation has been using a simulation tool for propagation environment analysis, Wireless Insite.

First, the simulation was performed the height of the receiving antenna was fixed at 1.5 m, and the height of the transmitting antenna was changed to 10m and 20 m. The simulation results show when the height of a transmitting antenna is 10 m, ripple due to the ground-reflected wave exists up to 800 m. However, when the height of a transmitting antenna is 20 m, ripple due to ground-reflected wave exists up to 1300 m. The following simulation was performed the material of the bottom surface was changed to concrete and soil. The results of this simulation show that the received power is higher for soil than for concrete. In addition to this, the simulation was performed by changing several parameters. Results of these simulations will be presented at the conference in detail.

The results of this research which the attenuation characteristics of frequency (1-6 GHz) will be expected to use as data for estimating the value of the frequency.

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