ABSTRACT

Good signal inside the building is one important part in attracting and satisfying customers of mobile phones. Usually outdor coverage of the network can not cover in a multi-storey building and has a lot of room in it. Larger data capacity and capabilities of the UMTS network to provide high speed data service is a very important requirement in mobile networks. Faculty of Electrical Building IT TELKOM is one of many building that has a lot of room and multi storied building so will result the poor network UMTS signal inside the building. Though the building is a place of learning based on information technology (IT). Therefore, it is necessary that both the communication network supporting communication. To overcome these problems need to be built an indoor UMTS cellular networks or IBC (Indoor Building Coverage).

IBC Systems (Indoor Building Coverage) is the way to improve indoor signal quality and to help the indoor propagation model. For the design of UMTS IBC faculty building electro IT TELKOM using TEMS software in performing Walk Test, planning coverage area and link budget using multiwall 231 Cost model and simulate the RPS software.

Through the link budget calculation using multiwall Cost 231 Model earned the required number of cell is 9 cell that is divided into 3 floors. Based on the simulations carried out are obtained average power received in the faculty building electro IT TELKOM is equal to -33.57 dbm. This shows a significant change of the results obtained during walk tests of -91.76 dbm. In other words, this design shows better results than the results walktest and meets KPI standards.

Keywords: Indoor building coverage (IBC), Walkt Test, UMTS.