UNIVERSITI TEKNOLOGI MARA

WIRELESS POWER TRANSFER ANTENNA

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ABSTRACT

Wireless local area network (WLAN) is being used at increasing number of places. In office buildings, hospitals, airport lounges and etc. By increasing the of speed data delivery, this WLAN need to provide higher data or signal transfer capacity which is requires wideband microwave frequencies. With the technology growth up, transfer signal or power is one of the fields can go far away using the wireless technology concept. Wireless power transfer is a great potential system in our life nowadays. The usage of the electricity can be efficient with revolution of the electromagnetic wave power transmission. Without any physical medium or wired, electrical power is transferring from one point to others.

To realize the system, WPT antenna is proposed to solve this problem. The WPT antenna is one of the most preferable for small equipment, especially when a built-in antenna is required such as in electronic devices. Because of WPT antenna operates in certain frequency, it can support the power transfer only at that frequency. WPT antenna also has many advantages such as low profile, easy fabrication and transfer power without any physical cable that can give easier in our daily life.

The aim of this project was to design and simulate a WPT antennas operating at 3.85 GHz and 6.85 GHz without degrade the performance of antenna in WPT technology. The WPT antenna operating at 3.85 GHz and 6.85 GHz was designed and simulated. Those designs were simulated with CST Software, Microwave Office software and used CAD software to determine the actual length.

Keywords: Wireless Local Area Network (WLAN), Wireless Power Transfer (WPT), Computer Simulation Technology (CST), Computer Aided Design (CAD)

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