Final Year Project 2004–2005

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Group Members:
So Siu Sum       02278077
Tsang Chin Man   02102711
Yeung Lo Fong   02362579

Supervisor:
Prof. CHEN KEVIN J.
From the late 20th century onwards, mobile phones become a fanatical craze among our generations. Antenna is widely used for making cellular phones, receiving and transmitting of the television signals, on accessing the wireless LAN in notebook computers. In order to verify the properties of antenna, a measurement system is necessary. In the Hong Kong University of Science and Technology, there is a state-of-the-art anechoic chamber and a frequency network analyzer HP8752C for performing antenna measurements. A system called ‘Antenna Measurement Magic’ is used to control the analyzer for testing antenna. The system is out-dated, regenesis of a new, multi-function, reliable system is essential.

This project is to make an antenna characterization system satisfy the demand of the wireless communication market nowadays, since the old version of the system no longer has enough characterization capabilities to reach the demand of the market. Besides, the current one was written in Visual Basic, a new software ’LabVIEW’ was intended to use for updating and improving the antenna characterization system. Afterwards, the new system would be used to perform tests on different types of standard antenna.
The dialogue on the left is the interface of the application.

Comparing with the old system, the user can know the radiation pattern immediately after the measurement without using other software. Also, the new system has calibration function which make the user can know the gain without any calculation.