ABSTRACT

From time to time, the growth of communication and information technology esspecially internet was very incredible fast and uncontrollabe. The needs of fast data connection makes the inventor arise the new technology callled 3G and HSDPA. This new technology is part of wireless technology and makes the user more and more flexible to connect to the internet everywhere at anytime. But, the fact that every systems and technology has a bug also found on 3G and HSDPA technology. For example, the user that lived on a place that surrounded by high buildings and sky tower or the user dont know where the exactly position of the BTS (Base Transceiver Station), so it makes the quality of 3G or HSDPA's signal not in best performance.

On this final project was designed and implementation of an automatic system that can find the position of 3G and HSDPA's signal by rotating the yagi's antenna with 1.8^{o} per step until one full lap or 200 steps. On each step would do a data acquisition of signal parameter, RSSI (Received Signal Strength Indication) and RSCP (Received Signal Code Power). Step that have the best data of RSSI will be the reference to the yagi's antenna stopped. This systems based on microcontroller to control the rotation of DC motor stepper.

After some experiments and testing, a device who can find the optimum 3G and HSDPA's signal was produced. This device is able to gain the 3G/HSDPA's signal with minimum gain 2 dBm and the maximum gain 12 dBm also the mean time of the system to do one process is 9 minutes 54 seconds. As te results, this device can find the optimum signal in line with the expectations.

Key words : *3G*, *HSDPA*, yagi's antenna, *automatic rotator system*