

ABSTRACT

The development of telecommunication technologies pushes cellular providers to strive against one another in giving the best service for their customers. The improvement of these services makes customers inconsistent in choosing their cellular providers that meets their needs. Customers of these services often change their providers because each operator varies in signal reception in different areas.

In this final project a device with the purpose of comparing signal quality from each provider was made. This device can be useful in helping cellular customers chose the suitable provider in accordance to their needs. In its implementation, this device can compare 3 different provider cards. This device is operated by doing a dialing process from the mobile phone transmitter to a receiver. The sound signal produced from the mobile phone receiver headset will then be amplified three times by an op amp circuit before being processed by an AT Mega 8 microcontroller. The result of the measurement will then be displayed using LED and LCD. For 1 cellular phone uses 3 LED to show the signal quality in a parameter, green LED indicating a good signal, yellow LED for intermediate signal, and red LED for poor signal while the LCD shows the voltage level of each provider.

The comparison result of each op amp shown in the LCD of this device shows an average of error between 0.10 – 0.14, while the sound signal quality for 3 cellular providers from several tests shows that Simpati card has the highest voltage with the rx level between -51 dBm up to -86 dBm.

Keyword : operator, voice signal quality, AT Mega 8 mikrocontroller,