

ABSTRACT

In Indonesia, the airport train or Railink is already operating in Tangerang City, namely at Soekarno-Hatta Airport. Most of the Soekarno-Hatta Railink Train passengers use smartphones integrated with Long Term Evolution (LTE) technology to do internet browsing, chat, or to check departure schedules. On December 3, 2020, a Drive Test (DT) was carried out using Tems Pocket to determine the quality of the parameter values on LTE, namely Reference Signal Received Power (RSRP), Signal to Interference Noise Ratio (SINR), and Throughput. The measurement results using the Actix Analyzer software show eight location points experiencing attenuation or Bad Spot with an average value of the RSRP parameter of -100.39 dBm, the SINR parameter of 4.50 dB, and the Throughput parameter of 3.92 Mbps. These parameter values still do not meet the Key Performance Indicator (KPI) standard of an operator.

To solve the problem of the low parameter values of RSRP, SINR, and Throughput, one of the methods used is to use improvements in terms of coverage. This method's approach is made by changing some transmitter parameters, with physical tuning methods such as mechanical tilting, changing azimuth patterns, and adjusting the antenna height. The next method is power configuration or setting the transmit power on a transmitter. These improvements were made with Atoll simulation software.

The standard operator KPI thresholds for RSRP parameters are > -91 dBm, $SINR > 16$ dB and $Throughput > 12$ Mbps. By making repairs at 8 Bad Spot points, the results obtained parameter values that meet the operator's KPI with the average value of the RSRP parameter after repair are -89.95 dBm, SINR parameter 16.83 dB, and the Throughput parameter of 37.42 Mbps.

Keywords: Airport Train, KPI, Long Term Evolution, RSRP, SINR, Throughput