

## ABSTRACT

On W-CDMA telecommunications network there certain areas that have weak signals from base stations in both outdoor and indoor conditions, so it certainly can cause disturbance and inconvenience for the user. This can be caused by many things, among others: the transmitter BTS is limited, circumstances that make the multipath environment and lots of obstacle, the distance the receiver is far enough away so enlarge the lost path, the environment has a fairly high intensity rain where rain large attenuation. For have overcome all the obstacles that are needed as one repeater an alternative that can receive signals from base stations and pass them back.

Repeater consists of two types of active and repeater passive repeater, which sets it apart is an active repeater requires a ration while the passive repeater does not require passive source. Repeater consists of three blocks of the outdoor antenna, indoor antenna and a coaxial conduit that connects the outdoor antenna and antenna indoor. Antenna outdoor function as signal receivers outside the building, then forwarded through the coaxial cable that has attenuation as small as possible, then the signal is re-emitted by indoor antenna indoor building.

At this final project is done the manufacture and testing of passive repeaters for RF signal amplification in the room indoor. Where on outdoor antenna uses a pyramid horn antenna that works at a frequency of 2.1 GHz, up to 17,4 dBi gain, and  $VSWR \leq 2$ , and the pattern unidirectional. Dan indoor antenna radiation using dipole antenna reflector which also works at a frequency of 2.1 GHz, up to 11,2 dBi gain, and  $VSWR \leq 2$  and radiation pattern unidirectional.

Key words: pyramidal horn antenna, dipole antenna reflector, passive repeater