

## ABSTRACT

In the beginning, coax network grew and became familiar in Europe and America. At first, HFC network is used to distribute analog TV broadcast.

But as grow as the need of interactif services (voice,video,data), The coax network is improved became a broadband system which accommodate the need of the services with adopt advance digital technology. In order to be a broadband system is combined to optical network and called HFC (Hybrid Fiber Coax). The HFC structure is a combination of coaxial cable as a feeder and optical links as a backbone.

Interactif services needs wide bandwidth and digital signal transmission, so a higher performance and a better stability is needed by the network. Because of that The design is done with reference to the standard that has been definted. Choosing passive devices and defining the level of operational amplifier became a very significant matter. In this planning will be channelled TV Kabel service as much 58 channel and internet service with allocation bandwidth equal to 4,8 MHZ for upstream and 9,2 MHZ for downstream. This planning design wished a good performance and fulfill the standard that has been definted, that is up to 43 dB for CNR, up to 50 dB for CTB,CSO, and XM, up to 40 dB for Hum modulation.