



## **REPEATER OVERVIEW:**

The Bi-Directional Repeater assembly provides an exceptional repeater/booster performance to extend the coverage area of radio communications in buildings and RF shielded environments.

Features such as high linearity power amplifiers are contributing for the overall improved system linearity performances. The unit is based on a duplexed path configuration, having sharp out of band attenuation for improved isolation between the receiving and transmitting paths.

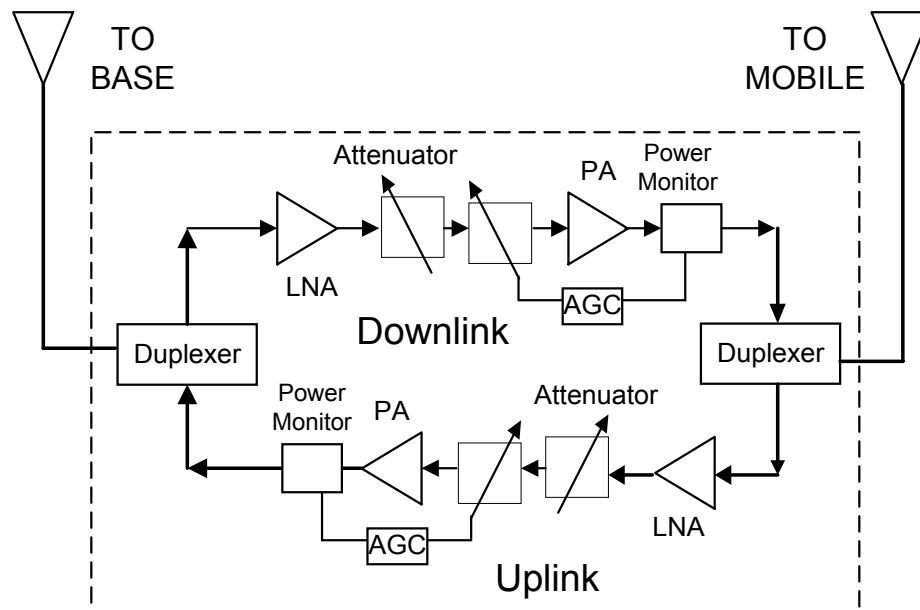
## **BLOCK DIAGRAM DESCRIPTION:**

The Repeater Downlink path receives the RF signals from base station, amplifies them and transmits them to the subscriber. The Repeater Uplink path receives the RF signals from the subscriber, amplifies them and transmits them to the base station. Two duplexers frequency separate the signals to the proper amplifying path and isolate the two signals.

For each path two amplifiers do the path signal amplification; a low noise amplifier (LNA) and a high power amplifier. The low noise amplifier has a 30 dB step attenuator to set the gain of the specific path.

## **REPEATER (BDA) OPERATION**

The RF connection is made via two type "N" female connectors. The RF connector labeled "Base" must be connected to the antenna pointing to the base station; usually a rooftop antenna. The RF connection labeled "Mobile" must be connected to the antenna pointing into the area to be covered by the Repeater such as inside a building or outdoor shaded area.



## BDA RF BLOCK DIAGRAM

### STEP ATTENUATOR AND RF GAIN SETTING

For proper operation of the Repeater, the isolation between the base station antenna and the mobile antenna should exceed the Repeater gain by at least 12 dB. If the Repeater gain were higher than the isolation between the antennas, oscillation would start and would saturate the amplifier. Isolation few dB higher than the Repeater gain cannot start oscillations but would cause gain ripple in the band.

The step attenuator on the low noise amplifier reduces the Repeater gain. The Repeater gain can be stepped down by the amount indicated on the step attenuator.