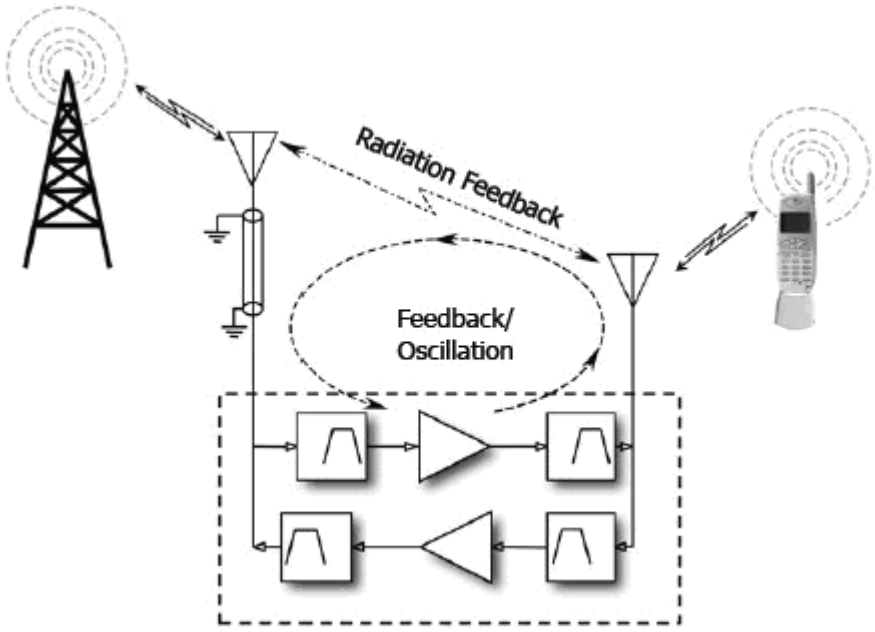
4. Operation

A. Isolation Check between Link and Service Antenna

i. Because the amplifiers in the repeater's input and output ports are tuned to the same frequency, oscillation (feedback) between link and service Antennas can occur if they are placed too close together like Following Figure.

ii. The effect is similar to that of a microphone that is held too close to its output speaker; you will hear a loud whistling (oscillation) noise. If the oscillation occurs in the repeater, it will jam BTS near the repeater and disrupt the operation of both your and other 3G phones in the area.



iii. There are several ways to prevent oscillation between link and service Antennas. The first involves increasing the distance between the antennas (just as you would move the microphone away from its speaker to stop the feedback.) The second is to decrease the gain of the repeater (similar to lowering the volume of the microphone's speaker.) The third is simple: turn the system off.

iv. The function which checks isolation will be implemented in this repeater to prevent oscillation and to install easily as installing the repeater. When the power of a repeater turns on, the repeater checks isolation between link and service antennas and sets up the maximum gain of the repeater to (isolation – 15 dB). At this time, the isolation is displayed in GUI. The isolation check of a repeater can be done anytime with GUI.