

ABSTRACT OF THE DISCLOSURE

A bothway RF repeater for use in a Personal Handy Phone system or in a Personal Communications System (hereinafter referred to as a PHP system or PCS) or in the Digital European Cordless Telephone (DECT), which are operated under the FDMA/TDD or TDMA/TDD or CDMA scheme, includes a "up-stream" coaxial connector to connect a common coaxial cable and/or two mutually isolated coaxial cables and/or an antenna system directed toward a base station, and two mutually isolated amplifiers for amplifying up-link and down-link RF signals, and a control means for ensuring that avoids an undesired self-oscillations caused by an over-coupling between up-link and down-link amplifiers, and the "down-stream" coaxial connectors to connect one or more coaxial cables and/or antenna systems and/or RF radiation cables directed toward the subscribers within the micro-cell serving areas.

The control means further includes at least one RF signal detector and a control circuit, which controls the linearity, output level, and/or gain of the said amplifiers. By using the control means, the down-link amplifier gain is increased and the up-link amplifier gain is decreased simultaneously when the detector on the down-link amplifier detects the RF signals which is transmitted from the base station.

Moreover, the said bothway RF repeaters are installed within a several stray building, under ground on a top of poles, on an overhead wire cable, and/or on a constructed structures, not only for enhancing the coverage of the base station but also for ensuring the extremely higher efficiency of channel usage by distributing the combined RF signals from a plurality of the base stations.