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(54) Title: DELAY COMBINER SYSTEM FOR CDMA REPEATERS AND LOW NOISE AMPLIFIERS

(57) Abstract

Signal delay and combining techniques are used with multipath signals to provide signal diversity gain within CDMA over-the-air repeater and low noise amplifier systems. An incoming signal from a remote user is typically processed through two processing paths, wherein one path adds a delay to the processed signal. The two signal paths are then combined and filtered through a sharp band pass filter, preferably a SAW filter. In an over-the-air repeater, the filtered signal is retransmitted towards a CDMA rake receiver at a base station, which can process the multipath signal to produce a clean signal representation. In a low noise amplifier, the filtered signal is transferred directly into a base station or repeater. The use of SAW filters protect the latter stages of the low noise amplifier, and also protect the base station from out-of-band signal interference. A quadruple diversity low noise amplification system for base stations embodiment is also disclosed, which provides quadruple diversity and improved sensitivity for CDMA base stations.

