

ABSTRACT

A code division multiple access communication system has a base station with a plurality of transmitting antennas. From each transmitting antenna of the base station, a pilot signal is transmitted having a different chip sequence than the other transmitting antenna. At a user equipment, the transmitted pilot signals are received from each transmitting antenna. A weight adjustment is derived in response to the received transmitted pilot signals. The user equipment transmits the weight adjustment to the base station. The transmitted weight adjustment is received from the user equipment. A data signal is processed to produce a plurality of versions of the data signal. At least a portion of each processed data signal has a different chip sequence than the other processed data signal version. At least one processed data signal version is weighted by a weight value adjusted in response to the received transmitted weight adjustment. From each transmitting antenna, a different one of the data signal versions is transmitted and the transmitted data signal versions are received at the user equipment.