



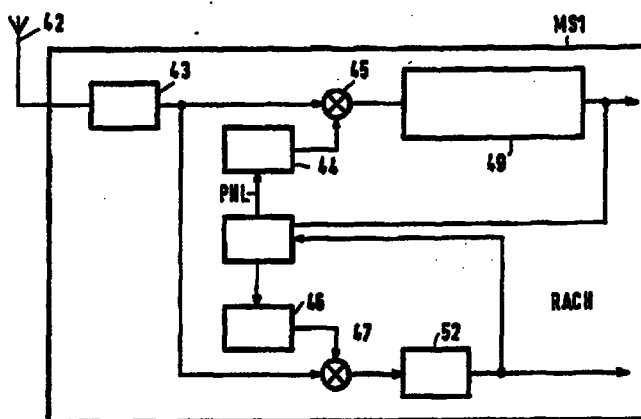
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(54) Title: A DIRECT-SEQUENCE SPREAD SPECTRUM COMMUNICATION SYSTEM, A PRIMARY RADIO STATION, AND A SECONDARY RADIO STATION



(57) Abstract

Known are direct-sequence spread spectrum systems (1) such as CDMA mobile radio systems applying short pseudo-noise sequences for encoding and decoding of data. A DS-SS communication system is provided in which less pseudo-noise sequences are used while at the same time providing efficient locking at the receiver side. To this end, a majority of the channels (BCH, PCH, AGCH, TCH, ACCH) in a cell (Z1, Z2) of a mobile radio system (1) share one long pseudo-noise sequence (PNL). At reception side, in a mobile radio station (MS1, MS2) or the like, efficient calculation of current sequence phases for current received channels is achieved by applying vector-matrix calculations to a received sequence state (x_i) and received sequence offset (offset) that are transmitted by a base station (BS1, BS2). The vector-matrix calculations apply precalculated and stored sequence offset transformation matrices (A).