

Title (en)

METHOD AND ARRANGEMENT FOR BEAM FORMING A RAKE RECEIVER FOR THE SINGLE USER RECEPTION FOR THE UPLINK CHANNEL IN MOBILE RADIO TELEPHONE SYSTEMS

Title (de)

VERFAHREN UND ANORDNUNG ZUR STRAHLFORMUNG EINES RAKE-EMPFÄNGERS FÜR DEN EIN-NUTZER-EMPFANG FÜR DEN UPLINK-KANAL IN MOBILFUNKSYSTEMEN

Title (fr)

PROCEDE ET DISPOSITIF DE MISE EN FORME DE FAISCEAU D'UN RECEPTEUR A RATISSAGE SERVANT A LA RECEPTION MONO-UTILISATEUR POUR LE CANAL DE LIAISON MONTANTE DANS DES SYSTEMES RADIOTELEPHONIQUES MOBILES

Publication

EP 1214797 A2 20020619 (DE)

Application

EP 00972580 A 20000906

Priority

- DE 0003120 W 20000906
- DE 19943687 A 19990906

Abstract (en)

[origin: WO0118975A2] The aim of the invention is to provide a solution for improving reception and for increasing the signal quality of mobile stations in CDMA-based mobile radio telephone systems of the third generation, whereby said solution is less complicated than already known solutions. According to the inventive method, a rake receiver is connected downstream in relation to a linear antenna array. The signals are first received via N antennas of an antenna array and are transmitted to beam formers. The directions of the individual paths of the reception signals are estimated simultaneously for transmitting the received signals to beam formers. The K most powerful paths are determined from the estimated directions of the paths and are classified according to the power thereof. The signals thus determined which belong to the directions $\omega_1, \dots, \omega_K$ are then transmitted to individual beam formers. The number of said beam formers matches with the number of the K most powerful paths. The weight factors $w(k)$ are subsequently determined in the k-th beam former, are multiplied with the signals of the outputs pertaining to the antenna array and the thus produced directional characteristic is allocated to the rake finger which is assigned respectively. The directional characteristics of each rake finger are then combined to form the entire reception signal of the 2D rake receiver. A directional characteristic for each individual finger of the 2D rake receiver is thus produced, whereby said characteristic is provided with an optimum directivity.

IPC 1-7

H04B 1/707; **H04B 7/08**; **H01Q 3/26**

IPC 8 full level

H01Q 3/26 (2006.01); **H01Q 21/08** (2006.01); **H01Q 25/00** (2006.01); **H04B 1/707** (2011.01); **H04B 7/08** (2006.01)

CPC (source: EP)

H01Q 3/2611 (2013.01); **H01Q 21/08** (2013.01); **H01Q 25/00** (2013.01); **H04B 1/711** (2013.01); **H04B 7/086** (2013.01)

Citation (search report)

See references of WO 0118975A2

Cited by

CN106416104A

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 0118975 A2 20010315; **WO 0118975 A3 20010802**; AU 1128901 A 20010410; DE 19943687 C1 20010726; EP 1214797 A2 20020619

DOCDB simple family (application)

DE 0003120 W 20000906; AU 1128901 A 20000906; DE 19943687 A 19990906; EP 00972580 A 20000906