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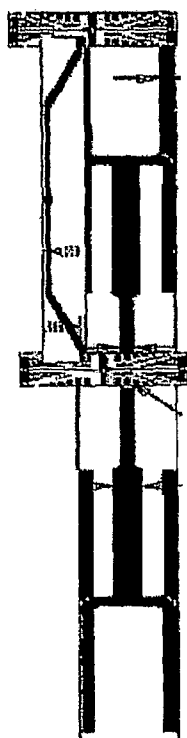
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(54) Title: ANTENNAS WITH POLARIZATION DIVERSITY

100



(57) Abstract: A horizontally polarized antenna array allows for the efficient distribution of RF energy into a communications environment through selectable antenna elements and redirectors that create a particular radiation pattern such as a substantially omnidirectional radiation pattern. In conjunction with a vertically polarized array, a particular high-gain wireless environment may be created such that one environment does not interfere with other nearby wireless environments and avoids interference created by those other environments. Lower gain patterns may also be created by using particular configurations of a horizontal and/or vertical antenna array. In a preferred embodiment, the antenna systems disclosed herein are utilized in a multiple-input, multiple-output (MIMO) wireless environment.

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INTERNATIONAL SEARCH REPORT

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B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 343/ 700MS, 702, 795, 818, 876, 893

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,407,719 B1 (OHIRA et al) 18 June 2002 (18.06.2002), figures 1-5	12-14, 24-25
Y	US 6,091,364 (MURAKAMI et al) 18 July 2000 (18.07.2000), figure 1	10-11
Y	US 5,786,793 (MAEDA et al) 28 July 1998 (28.07.1998), figure 1	8-9
Y	US 7,312,762 B2 (PUENTE BALLARDA et al) 25 Dec. 2007 (25. 12. 2007, figure 1	7
X	US 2004/0036654 A1 (HSIEH) 26 Feb. 2004 (26. 02.2004), figures 1-7	1-6, 15, 21, 26

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
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INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: MIMO, horizontally polarized antenna, vertically polarized antenna, array, switch, diode, parasitic antenna