

Title (en)  
MULTIPLE FREQUENCY ANTENNA

Title (de)  
MEHRFREQUENZ-ANTENNE

Title (fr)  
ANTENNE A FREQUENCES MULTIPLES

Publication  
**EP 0862239 B1 20050223 (EN)**

Application  
**EP 97939221 A 19970908**

Priority  
• JP 9703159 W 19970908  
• JP 26374496 A 19960913

Abstract (en)  
[origin: WO9811624A1] In order to stably receive GPS signals and to be attached to an arbitrary position of a car body, a GPS antenna (10) is incorporated in a cover (2) together with a matching substrate (9), etc. An antenna element (1) is connected to the substrate (9). Since the substrate (9), etc., are erected, the grounding effect of the antenna (10) is improved and, at the same time, the antenna (10) does not receive any adverse influence even when the elevation angle to a GPS satellite is low. Since the antenna element (1) is connected to the substrate (9) at an angle from the vertical line, the antenna (10) does not receive any adverse influence even when the elevation angle to the GPS satellite becomes lower.

IPC 1-7  
**H01Q 5/00**; **H01Q 1/22**; **H01Q 21/30**

IPC 8 full level  
**H01Q 21/30** (2006.01); **G01S 19/36** (2010.01); **H01Q 1/12** (2006.01); **H01Q 1/22** (2006.01); **H01Q 1/32** (2006.01); **H01Q 5/00** (2015.01); **H01Q 5/10** (2015.01); **H01Q 5/321** (2015.01); **H01Q 21/28** (2006.01)

CPC (source: EP KR)  
**H01Q 1/1214** (2013.01 - EP); **H01Q 1/22** (2013.01 - KR); **H01Q 1/3275** (2013.01 - EP); **H01Q 5/00** (2013.01 - KR); **H01Q 5/40** (2015.01 - EP); **H01Q 21/28** (2013.01 - EP); **H01Q 21/30** (2013.01 - KR)

Cited by  
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DE FR GB IT

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**WO 9811624 A1 19980319**; CN 1136628 C 20040128; CN 1205118 A 19990113; DE 69732564 D1 20050331; DE 69732564 T2 20060112; EP 0862239 A1 19980902; EP 0862239 A4 20010110; EP 0862239 B1 20050223; JP 3065949 B2 20000717; JP H1093327 A 19980410; KR 100389940 B1 20031024; KR 19990067437 A 19990816

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