

Title (en)  
Antenna apparatus for a motor vehicle.

Title (de)  
Antenne für ein Kraftfahrzeug.

Title (fr)  
Antenne pour un véhicule automobile.

Publication  
**EP 0438247 A1 19910724 (EN)**

Application  
**EP 91300238 A 19910114**

Priority  
JP 250690 U 19900116

Abstract (en)  
An antenna element (8) is arranged in one of the areas above or below a heating area on a motor vehicle window (1). The antenna element (8) is tuned to have a natural frequency which is higher than that of heater wires (2) on the heating area and forms a closed circuit through which a heating current flows. The heated area of the window is thus increased without using additional heating wires which are naturally not suited for an antenna for high frequency wave reception. A common power source (B) supplies heating current through leads (5a, 5b) to the heating wires (2) and the antenna element (8). Radio frequency chokes (6a, 6b) protect the source (B) from at least FM frequency current. <IMAGE>

IPC 1-7  
**H01Q 1/12**

IPC 8 full level  
**H01Q 1/32** (2006.01); **H01Q 1/12** (2006.01)

CPC (source: EP)  
**H01Q 1/1278** (2013.01)

Citation (search report)

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- [YP] EP 0382895 A1 19900822 - BOSCH GMBH ROBERT [DE]
- [A] EP 0065263 A1 19821124 - ASAHI GLASS CO LTD [JP]

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Designated contracting state (EPC)  
BE DE ES FR GB IT SE

DOCDB simple family (publication)  
**EP 0438247 A1 19910724; EP 0438247 B1 19941221**; DE 69106005 D1 19950202; DE 69106005 T2 19950713; ES 2065614 T3 19950216; JP H0394813 U 19910927; JP H0756495 Y2 19951225

DOCDB simple family (application)  
**EP 91300238 A 19910114**; DE 69106005 T 19910114; ES 91300238 T 19910114; JP 250690 U 19900116