

Title (en)  
MULTI-FREQUENCY ANTENNA MODULE

Title (de)  
MEHRFREQUENZANTENNENMODUL

Title (fr)  
MODULE D'ANTENNE MULTIFRÉQUENCE

Publication  
**EP 3147996 A1 20170329 (EN)**

Application  
**EP 16189903 A 20160921**

Priority  
GB 201517005 A 20150925

Abstract (en)  
A multi-frequency antenna module (10) for use with a smart card reader (50), the multi-frequency antenna module (10) comprising a module substrate (12); a radio-frequency identification near-field communication antenna (14) affixed to the module substrate (12), the radio-frequency identification near-field communication antenna (14) defining an inner area (22) on the module substrate (12); and a far-field antenna (16) affixed within the inner area (22) of the module substrate (12). The invention further relates to a smart card reader (50) and to a method of reducing the size of a smart card reader antenna module for a smart card reader (50) having multi-frequency communication means.

IPC 8 full level  
**H01Q 1/22** (2006.01); **H01Q 7/00** (2006.01); **H01Q 9/40** (2006.01); **H01Q 21/28** (2006.01)

CPC (source: CN EP)  
**H01Q 1/2216** (2013.01 - CN EP); **H01Q 1/521** (2013.01 - CN); **H01Q 5/307** (2015.01 - CN); **H01Q 7/00** (2013.01 - EP); **H01Q 9/40** (2013.01 - EP); **H01Q 21/28** (2013.01 - EP); **H01Q 1/2208** (2013.01 - EP)

Citation (search report)

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- [XI] WO 2008016327 A1 20080207 - AGENCY SCIENCE TECH & RES [SG], et al
- [X] CN 104466409 A 20150325 - GUANGDONG OPPO MOBILE TELECOMM
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Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3147996 A1 20170329**; CN 106558751 A 20170405; GB 201517005 D0 20151111

DOCDB simple family (application)  
**EP 16189903 A 20160921**; CN 201610845908 A 20160923; GB 201517005 A 20150925