

Title (en)  
IMPROVED ANTENNA SYSTEM AND ASSOCIATED DECOUPLING DEVICE

Title (de)  
VERBESSERTES ANTENNENSYSTEM UND ENTKOPPLUNGSVORRICHTUNG DAFÜR

Title (fr)  
SYSTÈME ANTENNAIRE AMÉLIORÉ ET DISPOSITIF DE DÉCOUPLAGE ASSOCIÉ

Publication  
**EP 4383458 A1 20240612 (FR)**

Application  
**EP 23214644 A 20231206**

Priority  
FR 2212895 A 20221207

Abstract (en)  
[origin: US2024195074A1] An antenna system including at least one elementary antenna, a metallic plane provided around the elementary antenna, and a decoupling device arranged on the metallic plane, the decoupling device being of the three-dimensional electromagnetic absorption structure type constituted of a plurality of cells arranged in an array, each cell includes, stacked according to a direction normal to the metal plane, a base surmounted by a raised wall, the antenna system being characterized in that the raised wall is shaped so as to form a recessed pattern for trapping electromagnetic waves.

Abstract (fr)  
Ce système antenne comporte au moins une antenne élémentaire, un plan métallique prévu autour de l'antenne élémentaire, et un dispositif de découplage (150) disposé sur le plan métallique, le dispositif de découplage étant du type structure d'absorption électromagnétique tridimensionnelle constituée d'une pluralité de cellules disposées en réseau, chaque cellule (152) comporte, empilées selon une direction normale au plan métallique, une embase (154) surmontée d'une paroi relevée, le système antenne étant caractérisé en ce que la paroi relevée (156) est conformée de manière à former un motif évidé de piégeage des ondes électromagnétique.

IPC 8 full level  
**H01Q 1/52** (2006.01); **H01Q 15/00** (2006.01); **H01Q 17/00** (2006.01)

CPC (source: EP US)  
**H01Q 1/525** (2013.01 - EP); **H01Q 11/10** (2013.01 - US); **H01Q 13/02** (2013.01 - US); **H01Q 15/006** (2013.01 - EP); **H01Q 17/00** (2013.01 - EP)

Citation (applicant)  
• CN 114421181 A 20220429 - BEIJING SANDI SCIENCE AND TECH CO LTD  
• US 2017365931 A1 20171221 - MARTEL CÉDRIC [FR]  
• US 7408500 B2 20080805 - SHINODA HIROSHI [JP], et al  
• X. LLESHIT. Q. VAN HOANG. LOISEAUXD. LIPPENS: "Design and Full Characterization of a 3-D-Printed Hyperbolic Pyramidal Wideband Microwave Absorber", IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS, vol. 20, no. 1, January 2021 (2021-01-01), pages 28 - 32, XP011830889, DOI: 10.1109/LAWP.2020.3037718  
• REN J ET AL.: "3D-Printed Low-Cost Dielectric-Resonator-Based Ultra-Broadband Microwave Absorber Using Carbon-Loaded Acrylonitrile Butadiene Styrene Polymer", MATERIALS (BASEL, vol. 11, no. 7, 20 July 2018 (2018-07-20), pages 1249, XP055831380, DOI: 10.3390/ma11071249

Citation (search report)  
• [A] CN 114421181 A 20220429 - BEIJING SANDI SCIENCE AND TECH CO LTD  
• [A] US 2017365931 A1 20171221 - MARTEL CÉDRIC [FR]  
• [A] US 7408500 B2 20080805 - SHINODA HIROSHI [JP], et al  
• [A] US 2019165468 A1 20190530 - XU SU [CN], et al  
• [A] US 2021126374 A1 20210429 - MALLEGOL STÉPHANE [FR], et al  
• [A] DE 10034547 A1 20020124 - UNIV KARLSRUHE [DE]

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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4383458 A1 20240612**; FR 3143219 A1 20240614; US 2024195074 A1 20240613

DOCDB simple family (application)  
**EP 23214644 A 20231206**; FR 2212895 A 20221207; US 202318530181 A 20231205