

Title (en)

Wide band printed phase array antenna for microwave and mm-wave applications

Title (de)

Breitbandige gedruckte phasengesteuerte Gruppenantenne für Mikrowellen/ -Millimeterwellen Anwendungen

Title (fr)

Réseau d'antennes à commande de phase et à large bande imprimé pour applications en micro-ondes/ ondes millimétriques

Publication

EP 0889542 A1 19990107 (EN)

Application

EP 97110678 A 19970630

Priority

EP 97110678 A 19970630

Abstract (en)

The present invention relates to a phase array antenna comprising a dielectric substrate (1) comprising a front and a back dielectric face (2, 3), a plurality of dipole means (4), each comprising a first and a second element (5, 6) for radiating and receiving electromagnetic signals, said first elements (5) being printed on said front face and pointing in a first direction and said second elements (6) being printed on said back face (3), and pointing in a second direction opposite to said first direction, metal strip means (7) for supplying signals to and from said dipole means (4), said metal strip means (7) comprising a first line (8) printed on said front face (2) and coupled to said first element (5) and a second line (9) printed on said back face (3) and coupled to said second element (6), and reflector means (10) spaced to and parallel with said back face (3) of said dielectric substrate (1), a low loss material (11) being located between said reflector means (10) and said back face (3), and having a dielectric constant less than 1.2, whereby said first and second lines (8, 9) respectively comprise a plurality of first and second line portions (13, 14), said first and second line portions (13, 14) respectively being connected to each other by T-junctions (15), whereby each of said first and second line portions (13, 14) is tapered between two adjacent T-junctions (15), so that the width of each line portion (13, 14) increases towards said first and second elements (5, 6), respectively, to provide an impedance transformation in the succeeding T-junction (15). The present invention relates to a low cost wide band planar printed antenna solution for microwave and mm-wave range. A particular solution for 60 GHz is introduced. <IMAGE>

IPC 1-7

H01Q 21/06

IPC 8 full level

H01P 5/02 (2006.01); **H01P 5/12** (2006.01); **H01Q 9/16** (2006.01); **H01Q 19/10** (2006.01); **H01Q 21/06** (2006.01)

CPC (source: EP)

H01Q 21/062 (2013.01)

Citation (search report)

- [Y] US 3587110 A 19710622 - WOODWARD OAKLEY MCDONALD
- [Y] GB 1012888 A 19651208 - LOTHAR ROHDE, et al
- [A] US 4719470 A 19880112 - MUNSON ROBERT E [US]
- [A] US 4758843 A 19880719 - AGRAWAL ASHOK K [US], et al
- [A] US 3681769 A 19720801 - PERROTTI EMMANUAL J, et al
- [A] US 4054874 A 19771018 - OLTMAN JR HENRY G
- [A] US 5440318 A 19950808 - BUTLAND ROGER J [NZ], et al

Cited by

KR100526585B1; CN109980361A; CN102938485A; CN112582804A; EP1911123A4; GB2573882A; GB2573882B; US7443354B2; US8503941B2; US6900765B2; WO2005112196A1; US11139588B2; US11811133B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 0889542 A1 19990107; JP H1197915 A 19990409

DOCDB simple family (application)

EP 97110678 A 19970630; JP 19964998 A 19980630