(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 738 023 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
21.05.1997 Bulletin 1997/21

(43) Date of publication A2:
16.10.1996 Bulletin 1996/42

(21) Application number: **96105722.1**

(22) Date of filing: **11.04.1996**

(51) Int. Cl.[6]: **H01Q 9/04**, H01Q 23/00

(84) Designated Contracting States:
DE FR GB

(30) Priority: **12.04.1995 JP 87134/95**

(71) Applicant: **MURATA MANUFACTURING CO., LTD.**
Nagaokakyo-shi Kyoto-fu 226 (JP)

(72) Inventors:
- **Tsuru, Teruhisa**
  Nagaokakyo-shi, Kyoto-fu (JP)
- **Mandai, Harufumi**
  Nagaokakyo-shi, Kyoto-fu (JP)
- **Shiroki, Koji**
  Nagaokakyo-shi, Kyoto-fu (JP)
- **Asakura, Kenji**
  Nagaokakyo-shi, Kyoto-fu (JP)

(74) Representative: **Schoppe, Fritz, Dipl.-Ing.**
Patentanwalt,
P.O. Box 71 08 67
81458 München (DE)

(54) Antenna device

(57) An antenna device (10) includes a dielectric substrate (17), at least one peripheral antenna circuit (18,19) formed inside or on a surface of the dielectric substrate (17), and a radiator (11) for receiving or transmitting a signal. The radiator (11) has a radiating portion (12) and at least a pair of opposed fixing portions (13,14) extending from the radiating portion (12) so as to form a square-bottomed U-shaped cross section. The pair of opposed fixing portions (13,14) are attached to side faces of the dielectric substrate (17) such that the radiating portion (11) and an upper surface of the dielectric substrate (17) create a space (22).

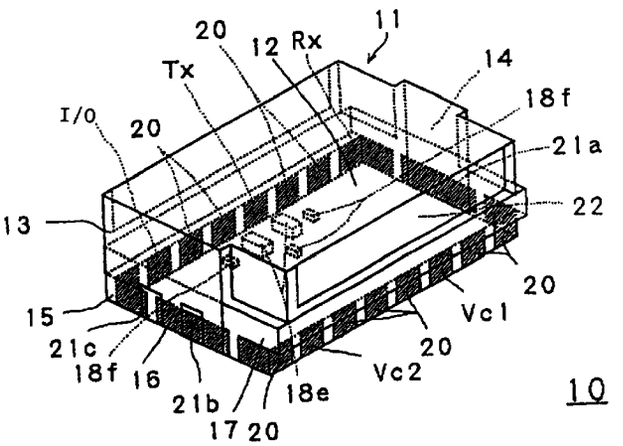


FIG. 1

EP 0 738 023 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 10 5722

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 621 653 A (MURATA MANUFACTURING CO) 26 October 1994 * column 21, line 41 - column 24, line 48; figure 25 * ---	1-11	H01Q9/04 H01Q23/00
E	EP 0 707 354 A (MURATA MANUFACTURING CO) 17 April 1996 ---	1-11	
X	* column 1, line 15 - column 3, line 40; figures 8-11 * -----	1-11	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

H01Q

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	17 March 1997	Johansson, R

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)