Claims

1 – Multiport antenna (200, 300), comprising at least two antenna motifs formed by circular symmetry and having a sectorial radiation pattern with a first polarization P1 (210, 220), which are mutually interconnected by two conductive parts (200_{r1}, 200_{r2}) that they share and which comprise at least two ports (211, 221), characterized in that it is composed of two shapes having one and the same centre, a first, outer shape (200a) and a second, inner shape (200b) connected by at least two conductive parts (200_{rj}), a motif with polarization P1 is formed by a first portion of the first shape (200a) and a first portion of the second shape (200b), the two portions (200a, 200b) being connected by at least one first conductive part (200_{r1}), said motif comprising at least one load (212, 222) and at least one port (211, 221) positioned opposite the load.

2 – Multiport antenna (200) according to Claim 1 characterized in that it is composed of two concentric circles, a first, outer circle (200a) of diameter ϕa and a second, inner circle (200b) of diameter ϕb connected by at least two radial conductive parts (200_{rj}), a motif with polarization P1 is formed by a first portion of the first circle (200a) and a first portion of the second circle (200b), the two portions (200a, 200b) being connected by at least one first conductive part (200_{r1}), said motif comprising at least one load (212, 222) and at least one port (211, 221) positioned opposite the load.

3 – Multiport antenna according to Claim 2, characterized in that it comprises at least one motif (230) with a second polarization P2 that is different from the first polarization P1, said motif (230) comprises a first portion (230a) and a second portion (230b), the two portions being connected by at least one radial conductive part (200_{r1}) shared with the motifs having the first polarization P1, said motif having the second polarization P2 (230) comprises a port (231) and a load (232) positioned opposite a port, for one and the same motif.

4 – Multiport antenna according to Claim 3, characterized in that it comprises a lower portion formed by symmetry with an upper portion, each portion comprising at least two motifs with a first polarization P1 (210, 220, 250, 260), which are endowed with a port (211, 221, 251, 261) and/or with a load (212, 222, 252, 262), the lower portion of the antenna and the upper portion being connected by at least one motif (230) with polarization P2.

5 – Multiport antenna according to Claim 4, characterized in that it has a height H and a width L, the value of the L/H ratio is chosen to optimize the sectorial radiation pattern Rs of a motif.

6 – Multiport antenna according to one of Claims 3 to 5, characterized in that the polarization P1 and the polarization P2 are orthogonal polarizations, with a horizontal polarization P_H and a vertical polarization P_V, respectively.

7 – Multiport antenna according to Claim 6, characterized in that it comprises at least three motifs with vertical polarization connected to one another by motifs with horizontal polarizations, the motifs being positioned to form a circular antenna.

8 – Multiport antenna according to Claim 6, characterized in that it comprises at least:

- an upper portion formed by four motifs with horizontal polarization (310, 320, 330, 340), each sharing a radial conductive portion ($300_{r1,}$ $300_{r2,}$ $300_{r3,}$ 300_{r4}) with its adjacent motif, each horizontal motif (310, 320, 330, 340) comprises a port (311, 321, 331, 341) and a load (312, 322, 332, 342), a port being positioned opposite the load of one and the same motif;
- four motifs with vertical polarization (350, 360, 370, 380), each vertical motif comprising a first portion (350a, 360a, 370a, 380a) and a second portion (350b, 360b, 370b, 380b) the two portions being connected by a radial conductive part ($300_{r1,}$ $300_{r2,}$ $300_{r3,}$ 300_{r4}) shared with the adjacent

horizontal motifs, each vertical motif (350, 360, 370, 380) comprises a port (351, 361, 371, 381) and a load (352, 362, 372, 382);

- a lower portion, symmetrical with the upper portion, comprising four motifs with horizontal polarization (310', 320', 330', 340'), each of which shares a radial conductive portion ($300'_{r1}$, $300'_{r2}$, $300'_{r3}$, $300'_{r4}$) with its adjacent motif, each motif (310', 320', 330', 340') comprises a port (311', 321', 331', 341') and a load (312', 322', 332', 342'), the four horizontal motifs are electrically connected by virtue of the radial conductive parts that they share ($300'_{r1}$, $300'_{r2}$, $300'_{r3}$, $300'_{r4}$).

9 – Multiport antenna according to one of the preceding claims, characterized in that a motif with a tubular structure whose geometry and dimensions are adapted for passing signal transmission or power supply cables therethrough.

10 – Multiport antenna according to one of Claims 2 to 9, characterized in that a vertical motif and/or a horizontal motif is a loaded folded dipole.

11 – Multiport antenna according to one of Claims 3 to 10, characterized in that it comprises a support plate (400) and a mast (410).

12 – Multiport antenna according to one of the preceding claims, characterized in that the antenna is a receiving antenna.

13 – Multiport antenna according to one of Claims 1 to 12, characterized in that it is adapted for use in VHF/UHF frequency bands.

14 – Use of the multiport antenna according to one of Claims 1 to 12 for radiogoniometry.