Claims

1. Electronic system provided with a plurality of interconnected electronic functions, characterised in that it comprises:

- a connection ring (2) comprising a plurality of superposed layers, alternately conductive and insulating, the superposed conductive layers (C) being linked to one another by electrical links (5) and forming an interconnect network, said connection ring (2) comprising an inner cavity (3);

- a plurality of electronic functions (4) arranged inside the inner cavity (3) of said connection ring (2) on a plurality of levels (N1, N2, N3, N4), with at least one electronic function (4) per level, each of said electronic functions (4) being linked to the connection ring (2) at the level of the inner face (2A) of the latter; and

- two heat sinks (12A, 12B) arranged, respectively, on the two faces, vertically at the far end (13A, 13B) from the vertical stack (13) of electronic functions (4).

2. Electronic system according to claim 1, characterised in that the connection ring (2) has one of the following shapes:

- a cylindrical shape;

- a parallelepiped shape.

3. Electronic system according to one of claims 1 and 2, characterised in that, in the connection ring (2), the electrical links (5) between two successive levels (N1, N2, N3, N4) are made via electrically conductive holes.

4. Electronic system according to any one of claims 1 to 3, characterised in that the electronic functions (4) are linked to the connection ring (2) via the electrical connections (6) which are connected, on one hand, to inputs/outputs of the electronic functions (4), and on the other hand, to metallic tracks situated inside the connection ring (2).

5. Electronic system according to any one of the preceding claims, characterised in that it comprises surface connections (8) at least on a lower part (2B) of the connection ring (2).

6. Electronic system according to any one of the preceding claims, characterised in that it comprises at least one spacer (10) between two levels (N1, N2) of directly successive electronic functions (4A, 4B).

7. Electronic system according to claim 6, characterised in that the spacer (10) comprises at least one interconnect circuit.

8. Electronic system according to any one of the preceding claims, characterised in that the electronic functions (4) arranged over said plurality of levels form a vertical stack (13), and in that, the electronic system (1) comprises at least one heat sink (12A, 12B) arranged on a face, vertically at the far end from the vertical stack (13) of electronic functions (4).

9. Electronic system according to claim 8, characterised in that it comprises a heat seal (14) associated with the heat sink (12A).

10. Electronic system according to any one of the preceding claims, characterised in that it comprises at least one resin coating arranged in at least one part of the inner cavity (3) of the connection ring (2).

11. Method for assembling an electronic system according to any one of claims 1 to 10, characterised in that it comprises at least the following steps:

- providing output connections on the connection ring (2), the connection ring (2) comprising the plurality of superposed layers, alternately conductive and insulating, the superposed conductive layers (C) being linked to one another by electrical links (5) by forming the interconnect network, said connection ring (2) comprising an inner cavity (3);

- arranging the connection ring (2) on a base substrate (9);

- successive provisions of different levels (N1, N2, N3, N4) of electronic functions (4), inside the inner cavity (3) of the connection ring (2), starting with the lower part of the latter, with a connection, level by level, of inputs/outputs with the connection ring (2);

- providing a lower heat sink (12A) and an upper heat sink (12B).

12. Method according to claim 11, characterised in that it comprises, in addition, a subsequent step of filling with a coating resin of at least one empty part of the inner cavity (3) of the connection ring (2).

13. Method according to one of claims 11 and 12, characterised in that the step of providing the heat sink (12A, 12B) is being implemented:

- before the successive provisions of different levels (N1, N2) of electronic functions (4), for the lower heat sink (12A);

- after the successive provisions of different levels (N1, N2) of electronic functions (4), for the upper heat sink (12B).

14. Method according to any one of claims 11 to 13, characterised in that it comprises, in addition, at least one step of providing the at least one spacer (10), between two levels (N1, N2) of electronic functions (4), this step being implemented between the two successive provisions of said two levels (N1, N2) of electronic functions (4).