

Claims:

1 . Electronic module (M) comprising a first metal layer (1) including at least one contact pad (2A) or a conductive pad for connection or interconnection,
5 an electrically insulating layer (5) that is connected to the metal layer via a first surface and a second metal layer (3, 2B, 10, 11, 12) connected to the insulating layer on the opposite surface thereof, location for a chip or electronic chip (7) electrically
10 connected to said at least one contact pad (2A), through openings (6) in the insulating layer,

characterised in that the insulating layer is an adhesive.

2. Electronic module according to claim 1,
15 characterised in that the second metal layer (2B) is arranged in relation to the first layer or conversely, so as to overlap perpendicularly, either entirely or at least predominately, the dividing lines (16) or discontinuity lines of the contact pads (2A) or the
20 metal zones of the first layer (2A).

3. Electronic module according to any of claims 1 or 2, characterised in that the second metal layer (10, 2B) is formed of a continuous layer with connection perforations (6) or a layer with regular cut-outs.

25 4. Electronic module according to any of claims 1 to 3, characterised in that the second metal layer (2B) forms at least two pads (11, 12) designed to connect

pads for connections of an antenna and extending roughly over the entire bottom surface of the module.

5 5. Electronic module according to any of claims 1 to 3, characterised in that the second metal layer (10) forms at least one antenna and pads for connection to the chip.

6. Electronic device comprising the module according to any of the above claims.

10 7. Method for manufacturing an electronic module comprising the following stages of

- application of a first metal layer comprising at least one contact pad (2A) of a connection terminal,

- application of a second metal layer comprising at least one metal pad (2B, 10, 11, 12)

15 - attachment of an electrically insulating layer (5) to a first surface of the metal layer (2B, 10, 11, 12) in order to form an assembly (3),

20 - perforation of the preceding two layers with orifices (6) intended to have a conductor passing through for connecting an electronic component such as an integrated circuit chip,

- attachment of the first metal layer (1, 2A) to the assembly (3) via the insulating layer (5)

- characterised in that the electrically insulating layer (5) is selected from an adhesive, a heat-activated adhesive or an adhesive film.

5 8. Method according to the above claim, characterised in that the second metal layer (2B) is arranged in relation to the first layer (1, 2A) or conversely, so as to overlap perpendicularly, either entirely or at least predominately, the dividing lines (16) or discontinuity lines of the contact pads (2A) or
10 the metal zones of the first layer.

9. Method according to any of claims 7 or 8, characterised in that it comprises a stage of moving and electrical connection of an electronic chip to said at least one contact pad (2A), through orifices (6) in
15 the insulating layer (5).

Claims:

1 . Electronic module (M) comprising a first
conductive layer (1) including at least one conductive
surface, an electrically insulating layer (5) in an
5 adhesive form that is fixed through a first face to
said conductive layer and a second metallic layer or
sheet (3, 2B, 10, 11, 12) fixed to the insulating layer
on the opposite surface thereof, a location for a chip
or an electronic chip (7) electrically connected to
10 said at least one conductive layer (2A), through the
insulating layer,

characterised in that said second metallic layer
or sheet (3, 2B, 10, 11, 12) comprises openings or
connecting holes for connecting the chip.

15 2. Electronic module according to claim 1,
characterised in that the second metallic layer or
sheet (2B) forms at least two contact pads (11) or
interconnection pads (12).

20 3. Electronic module according to claim 1 or 2,
characterised in that the second metallic layer or
sheet (2B) is arranged in relation to the first layer
or conversely, so as to overlap perpendicularly, either
entirely or at least 30 % of dividing lines (16) or
discontinuity of said first conductive layer (1).

25 4. Electronic module according to any of claims 1
or 3, characterised in that the second metallic layer
or sheet (2B) is regularly cutted-out or forms a grid.

5. Electronic module according to any of claims 1 to 4, characterised in that the second metal layer or sheet (2B) forms at least two interconnection pads (11, 12) designed to connect pads for connections of an antenna and extending roughly over the entire bottom surface of the module.

6. Electronic module according to any of claims 1 to 5, characterised in that the second metal layer or sheet (10) forms at least one antenna and pads for connection to the chip.

7. Electronic device comprising the module according to any of the above claims.

8. Method for manufacturing an electronic module comprising the following stages of

- application of a second metallic layer or sheet comprising at least one metal pad or zone (2B, 10, 11, 12)

- attachment of an electrically insulating layer (5) selected from an adhesive, a heat-activated adhesive or an adhesive film, to a first surface of said metallic layer or sheet (2B, 10, 11, 12) in order to form an assembly (3),

- perforation of the preceding two layers with connection orifices (6) or openings for connecting an electronic component such as an integrated circuit chip,

- attachment of the first conductive layer (3) comprising at least a conductive pad (2A) to the assembly (3) via the insulating layer (5),

5 - characterised in that said second metallic layer or sheet (2B) comprises openings or connection orifices (6) to connect to the chip.

9. Method according to the above claim, characterised in that at least two zones or pads (11, 12) are formed in said second metallic layer of sheet
10 (2B).

10. Method according to the above claim, characterised in that the second metal layer (2B) is arranged in relation to the first layer (1, 2A) or conversely, so as to overlap perpendicularly, either
15 entirely or at least 30 % the dividing lines (16) or discontinuity of said first conductive layer (1).

11. Method according to any of claims 8 to 10, characterised in that it comprises a stage of moving and electrical connection of an electronic chip to said
20 at least one contact pad (2A), through openings or orifices (6) in the insulating layer (5) and in the said second metallic layer or sheet (2B).