

CLAIMS

1. A method for manufacturing a module (17) having an electronic chip comprising:

5 - metallisations accessible from a first side of the metallisations and an integrated-circuit chip disposed on the second side of the metallisations, opposite to the first side,

10 - electrical interconnection elements (9C, 19C, 30), separate from the metallisations, directly connecting the chip and disposed on the second side of the metallisations,

characterised in that the electrical interconnection elements (9C, 19C, 30) are produced on a single-face module.

15 2. The method according to claim 1, characterised in that the interconnection elements (9C, 19C) extend on or above or along an interconnection zone Z.

20 3. The method according to either of the preceding claims, characterised in that the interconnection elements (9C, 19C) extend outside the periphery of the module and in that these elements are cut subsequently.

25 4. The method according to any of the preceding claims, characterised in that one end of these interconnection elements directly connects a pin of the chip 8 by soldering while the other end is soldered to conductive pads (or metallisations) situated outside

the limit of the module (27), through an orifice (or connection well) (22C, 22L) provided in a dielectric substrate.

5 5. The method according to any of the preceding claims, characterised in that it comprises a step of at least partial enrobing of the chip (8) by an enrobing and/or adhesive material (14) with the exception of at least one portion of the interconnection elements (9C, 19C, 30).

10 6. The method according to claim 2, characterised in that it comprises a step of forming interconnection pins (30) from conductive material in the interconnection zone (Z) so as to trap/electrically contact a portion of at least one interconnection
15 element (9C, 19C).

 7. The method according to any of the preceding claims, characterised in that it comprises a step of cutting the interconnection element (9C, 19C) during a step of extracting/cutting the module (17) from a strip
20 (37).

 8. A method for manufacturing an electrical and/or electronic device, said device comprising a support body (40) and the module (17) obtained according to claim 6, fixed to the support body,
25 characterised in that it comprises the following steps of:

 - forming a support body (2) having terminals (32) of a second circuit accessible in/on the support body,

- transferring the module onto the support body, a first circuit (8, 30) of the module connecting said terminals (32) of the second circuit.

5 9. The method according to claim 8, characterised in that the step of connecting the module to the connection terminals (32) takes place during the fixing of the module (17) to the support body, the pins (30) connecting said connection terminals (32) of the support body.

10 10. The method according to claim 9, characterised in that it comprises a step of depositing conductive material on said terminals or tracks (32).

15 11. The method according to either claim 1 or claim 2, characterised in that the interconnection elements (9C, 19C) are disposed solely within the periphery of the module.

20 12. The method according to claim 1, characterised in that the interconnection elements (9C, 19C) are held in place on or above or along an interconnection zone Z by adhesion.

25 13. The method according to claim 12, characterised in that the adhesion is effected via an adhesive for inserting the module or by thermocompression or thermoadhesion on an adhesive surface of the module.

14. The method according to any of the preceding claims, characterised in that said circuit comprises an antenna or a display or a keypad or a switch.

15. A module (17) having an electronic chip, comprising:

- metallisations accessible from a first side of the metallisations and an integrated-circuit chip disposed on the second side of the metallisations, 5 opposite to the first side,

- electrical interconnection elements (9C, 19C, 30), separate from the metallisations, directly connecting the chip and disposed on the second side of the metallisations, 10

characterised in that the electrical interconnection elements (9C, 19C, 30) are produced on a single-face module.

16. The module (17) having an electronic chip according to claim 15, comprising electrical contact pads (10) accessible on a first face of a dielectric substrate (20) and the integrated-circuit chip (8) on the same side as a second face opposite to the first face, characterised in that it comprises electrical interconnection elements (9C, 19C, 30) connecting the chip and extending over/above/along the second face of the substrate. 20

17. A device comprising the module according to either claim 15 or claim 16.