

CLAIMS

- 5 1. A method for producing a chip card module comprising:
a step where a substrate having a first main face and a second main face is provided, with, on the first main face of the substrate, contacts for making a temporary electrical connection with a contact card reader device;
a step where an electronic chip is attached to the substrate;
- 10 a step where a first end of at least one wire is connected directly to a connection pad of the chip, and the chip and the first end of the at least one wire are encapsulated in a resin, characterized in that a second end of the at least one wire is left outside the resin for a direct connection with at least one antenna pad located on a carrier which is different from the substrate.
- 15 2. The method according to claim 1, comprising a step in which the second end of the at least one wire is fixed to a transfer pad through a connection well previously made through the substrate.
- 20 3. The method according to claim 2, in which a cut is made around the chip connected to the first end of at least one wire, the cut delimiting the chip card module and defining final dimensions of the chip card module as a singulated module, and the connection well, in which the second end of the at least one wire is fixed, being located outside the chip card module after cutting.
- 25 4. The method according to claim 1, comprising a step in which a hot-melt material is applied to the second main face of the substrate, such that one portion of the at least one wire is accessible and another portion is held between the substrate and the hot-melt material.
- 30 5. The method according to claim 4, in which the hot-melt material, in which a window has been made, is applied to the second face of the substrate, leaving the at least one wire accessible through the window.
- 35 6. The method according to claim 4, comprising a step in which the module is singulated by dicing the module according to final dimensions, the portion of the at least one wire that is left accessible is then located on the singulated module.
7. A method for producing a chip card comprising:

production of a module comprising a substrate having a first main face and a second main face, with, on the first main face of the substrate, contacts for making a temporary electrical connection with a contact card reader device, and comprising an electronic chip attached to the substrate;

5 production of an antenna on a carrier which is different from the substrate, this antenna comprising two ends, each equipped with a connection land;

production of a cavity in at least one layer of the card at least partially covering the carrier, in order to house the module and to expose the connection lands of the antenna;

10 direct connection of a first end of at least one wire to a connection pad of the chip,

characterised in that a portion of the at least one wire is connected directly to at least one of the connection lands of the antenna.

15 8. The method according to claim 7, in which the first end of the at least one wire is encapsulated in an encapsulation resin.

9. The method according to claim 8, in which a portion of the at least one wire is held, outside the encapsulation resin, at least partially on the substrate using a hot-melt
20 material.

10. The method according to claim 7, in which the portion of the at least one wire is soldered to at least one of the connection lands of the antenna by applying a thermode to a contact located on the first main face of the substrate.

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11. A chip card module comprising:

a substrate having a first main face and a second main face, with, on the first main face of the substrate, contacts for making a temporary electrical connection with a contact card reader device;

30 an electronic chip fixed to the substrate;

at least one wire connected, by a first end, to a connection pad of the chip,

in which the chip and the first end of the at least one wire are encapsulated in a resin,

35 characterized in that a portion of the at least one wire extends out of the resin for a direct connection with an antenna pad located on a carrier which is different from the substrate.

12. The chip card module according to claim 11, comprising a layer of hot-melt material, applied to the second main face of the substrate, having at least one portion of the at least one wire uncovered by the hot-melt material.

- 5 13. A chip card comprising a module with a substrate and a chip on the substrate, and an antenna, characterized in that the chip card comprises at least one wire having a first end connected directly to a connection pad of the chip and a portion connected directly to a connection land of the antenna, where the antenna is located on a carrier which is different from the substrate, in which the first end of the at least one wire is
10 encapsulated, with the chip, in a resin and a portion of the at least one wire outside the encapsulation resin is soldered, through an opening made in a hot-melt sheet, to the connection land of the antenna.