CLAIMS

1. A testing head (20) for testing the functionality of an electronic device, the testing head (20) comprising:

- a plurality of contact probes (10) comprising a probe body (10') extended longitudinally between a first end portion (10a) and a second end portion (10b) which are adapted to contact respective contact pads;

- at least one lower guide (40) provided with guide holes (40h) for the sliding housing of the contact probes (10); and

- a conductive portion (21) in the lower guide (40), the conductive portion (21) including at least one group (40h') of the guide holes (40h) and being adapted to contact and short-circuit a corresponding group of contact probes which are housed in said group (40h') of holes and are adapted to carry a certain type of signal,

wherein at least the contact probes (10) housed in said group (40h') of holes comprise an elastically deformable portion (P) adapted to be inserted at least partially into the guide holes of said group (40h'), wherein the portion (P), when housed in the guide holes of said group (40h'), is in a configuration in which it is deformed by the contact with at least one wall (40hW) of the guide holes and exerts on the wall (40hW) a reaction force (F), ensuring a sliding contact during the test of the electronic device.

2. The testing head (20) according to claim 1, wherein the at least one conductive portion (21) covers at least one portion of at least one wall (40hW) of the guide holes of said group (40h') of holes, forming a metallized portion of the holes which the elastically deformable portion (P) is adapted to contact.

3. The testing head (20) according to claim 2, wherein the entire wall (40hW) of the holes is covered by the conductive portion (21).

4. The testing head (20) according to claim 1, further comprising an upper guide (50) separated from the lower guide (40) by an air gap (G) and provided with respective guide holes (50h), wherein the conductive portion (21) and the elastically deformable portion (P) are arranged only at the lower guide (40), which is the guide closest to the device under test, or are arranged at both guides.

5. The testing head (20) according to claim 4, wherein the lower guide (40) and the upper guide (50) are shifted from each other, resulting in an offset of the first end portion (10a) of each contact probe (10) with respect to the second end portion (10b).

6. The testing head (20) according to claim 1, also comprising contact probes without the elastically deformable portion (P).

7. The testing head (20) according to claim 1, wherein the at least one conductive portion (21) is configured to form a common conductive plane for one of a ground domain, a power domain, or for a set of contact probes (10) carrying a same operating signal.

8. The testing head (20) according to claim 1, wherein the probe body (10') of the contact probes (10) comprises, at the elastically deformable portion (P), a through cut (C) which separates different portions of the probe body (10') from each other and defines the shape of the portion (P).

9. The testing head (20) according to claim 8, wherein the cut (C) extends at least along two different directions and defines the elastically deformable portion (P) in the form of a strip, which is connected to the probe body (10') at a connection zone (Z) and is separated from the rest of the probe body (10') by the cut (C), the strip being adapted to contact the wall (40hW) of the guide holes when it is housed therein and being configured to be elastically deformed and to exert on the wall (40hW) the reaction force (F).

10. The testing head (20) according to claim 9, wherein the elastically deformable strip comprises a curved section (C') with respect to the

longitudinal axis thereof.

11. The testing head (20) according to claim 8, wherein, in the deformed configuration when the contact probes (10) are housed in the holes of the lower guide (40), the deformation of the elastically deformable portion (P) results in a reduction of the area of the cut (C) with respect to the configuration in which the contact probes (10) are not housed in the holes of the lower guide (40).

12. The testing head (20) according to claim 1, wherein the elastically deformable portion (P) extends longitudinally along a length at least equal to the thickness of the lower guide (40).

13. The testing head (20) according to claim 1, wherein, in the configuration in which the contact probes (10) are not housed in the guide holes, the probe body (10') at a section of the elastically deformable portion (P) has a maximum transversal extension (T) greater than the width of the guide holes (40h) of the lower guide (40).

14. The testing head (20) according to claim 1, wherein the end portion (10a) of the contact probes (10) comprises a beveled portion (11), the end portion (10a) being adapted to contact pads of the device under test.

15. The testing head (20) according to claim 1, wherein the conductive portion (21) is arranged on one face of the lower guide (40).

16. The testing head (20) according to claim 1, wherein the conductive portion (21) is in the form of a plurality of metallizations, which are electrically insulated from each other and are configured to form a plurality of conductive portions for the contact probes (10).