What is claimed is:

1. An alignment fixture for an integrated circuit (IC) package, comprising:

a first socket having a recess dimensioned to receive a first surface of the IC package and having a first magnet arrangement disposed outside of the recess, wherein the IC package has a second surface opposite to the first surface and has a first electrical contact element on the second surface; and

a second socket having a second electrical contact element and having a second magnet arrangement;

wherein the first and second electrical contact elements are aligned when the IC package is disposed in the recess, the IC package is disposed between the first and second sockets along a first axis, and the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement to mate the first and second sockets.

2. The alignment fixture of claim 1, wherein the first electrical contact element is disposed in a recess of the second surface of the IC package.

3. The alignment fixture of claim 2, wherein the second electrical contact element includes a pin, and when the IC package is disposed in the recess and the IC package is disposed between the first and second sockets, the pin extends toward the first socket.

4. The alignment fixture of claim 1, wherein:

a plurality of springs are coupled with a first surface of the first socket and the recess is disposed on a second surface of the first socket; and

the second surface of the first socket is opposite to the first surface of the first socket.

5. The alignment fixture of claim 4, further comprising:

a retention member disposed proximate to the first surface of the first socket to limit elongation of the plurality of springs.

6. The alignment fixture of any of claims 1-5, wherein:

the first surface of the IC package comprises a plurality of conductive balls; and

the recess comprises a plurality of sockets dimensioned to receive the plurality of conductive balls.

7. The alignment fixture of any of claims 1-5, wherein:

individual magnets of the first and second magnet arrangements have a first polarity end, a second polarity end, and a longitudinal axis defined by the first and second polarity ends; and

individual magnets of the first and second magnet arrangements are oriented with longitudinal axes parallel to the first axis.

8. The alignment fixture of claim 7, wherein:

the first magnet arrangement includes four magnets disposed at four corners of a rectangle; and

two of the four magnets have a first polarity and are disposed at diagonal corners, and two of the four magnets have a second polarity different from the first polarity and are disposed at different diagonal corners.

9. The alignment fixture of any of claims 1-5, wherein:

individual magnets of the first and second magnet arrangements have a first polarity end, a second polarity end, and a longitudinal axis defined by the first and second polarity ends; and

individual magnets of the first and second magnet arrangements are oriented with longitudinal axes perpendicular to the first axis.

10. The alignment fixture of claim 9, wherein the first magnet arrangement includes four magnets disposed at four corners of a rectangle.

11. The alignment fixture of claim 9, wherein:

the first socket includes a side wall; and

the first magnet arrangement is at least partially disposed in the side wall.

12. The alignment fixture of claim 11, wherein:

the side wall defines a rectangle;

the first magnet arrangement includes two magnets on different sides of the rectangle and proximate to a first corner of the rectangle; and

the first magnet arrangement includes two magnets on different sides of the rectangle and proximate to a second corner of the rectangle.

13. The alignment fixture of claim 9, wherein, when the first and second sockets are mated:

a longitudinal axis of a magnet of one magnet arrangement is oriented parallel to the longitudinal axes of two magnets of another magnet arrangement;

the longitudinal axis of the magnet of the one magnet arrangement is disposed between the longitudinal axes of the two magnets of the another magnet arrangement in a direction perpendicular to the longitudinal axis of the magnet;

the first polarity end of the magnet of the one magnet arrangement faces the first polarity ends of the two magnets of the another magnet arrangement; and

the one magnet arrangement and the another magnet arrangement are two different magnet arrangements selected from a group consisting of the first magnet arrangement and the second magnet arrangement.

14. The alignment fixture of any of claims 1-5, wherein, when the first and second sockets are mated, one or more magnets of the first magnet arrangement do not contact one or more magnets of the second magnet arrangement.

15. The alignment fixture of any of claims 1-5, wherein, when the first and second sockets are mated, a net magnetic force between the first and second magnet arrangements is a repulsive force.

16. The alignment fixture of any of claims 1-5, wherein, when the first and second sockets are mated, a net magnetic force between the first and second magnet arrangements is an attractive force.

17. The alignment fixture of any of claims 1-5, further comprising:

a housing including two or more recesses;

wherein:

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

18. A method of manufacturing an alignment fixture, comprising:

forming a first socket having a recess dimensioned to receive a first surface of an integrated circuit (IC) package, wherein the IC package has a second surface opposite to the first surface and has a first electrical contact element on the second surface;

providing a first magnet arrangement to the first socket, wherein the first magnet arrangement is disposed outside of the recess;

forming a second socket;

providing a second magnet arrangement to the second socket; and

providing a second electrical contact element to the second socket;

wherein the first and second electrical contact elements are aligned when:

the IC package is disposed in the recess,

the IC package is disposed between the first and second sockets along a first axis, and

the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement to mate the first and second sockets.

19. The method of claim 18, wherein providing the first magnet arrangement to the first socket includes securing a magnet by friction fit in a magnet recess of the first socket.

20. The method of claim 19, wherein the magnet recess of the first socket has a chamfered opening.

21. The method of claim 18, wherein the second electrical contact element comprises a conductive pin.

22. The method of any of claims 18-21, further comprising:

coupling the second socket to a housing;

wherein the housing includes two or more recesses;

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

23. A method of testing an integrated circuit (IC) package, comprising:

positioning a first surface of the IC package in a recess of a first socket, wherein the first socket has a first magnet arrangement disposed outside of the recess, the IC package has a second surface opposite to the first surface, and the IC package has a first electrical contact element on the second surface;

after positioning the first surface of the IC package in the recess, mating a second socket with the first socket, wherein, when mated:

the second socket has a second electrical contact element and a second magnet arrangement,

the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement,

the IC package is disposed between the first and second sockets along a first axis, and

the first and second electrical contact elements are aligned; and

transmitting an electrical signal, via the first and second electrical contact elements, between the IC package and test equipment coupled with the second socket.

24. The method of claim 23, further comprising:

prior to mating the second socket with the first socket, coupling the second socket to a housing;

wherein:

the housing includes two or more recesses;

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

25. The method of any of claims 23-24, wherein at least one magnet of the first magnet arrangement has a diameter of approximately 1/16 of an inch.

What is claimed is:

1. An alignment fixture for an integrated circuit (IC) package, comprising:

a first socket having a recess dimensioned to receive a first surface of the IC package and having a first magnet arrangement disposed outside of the recess, wherein the IC package has a second surface opposite to the first surface and has a first electrical contact element on the second surface; and

a second socket having a second electrical contact element and having a second magnet arrangement;

wherein the first and second electrical contact elements are aligned when the IC package is disposed in the recess, the IC package is disposed between the first and second sockets along a first axis, and the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement to mate the first and second sockets.

2. The alignment fixture of claim 1, wherein the first electrical contact element is disposed in a recess of the second surface of the IC package.

3. The alignment fixture of claim 2, wherein the second electrical contact element includes a pin, and when the IC package is disposed in the recess and the IC package is disposed between the first and second sockets, the pin extends toward the first socket.

4. The alignment fixture of claim 1, wherein:

a plurality of springs are coupled with a first surface of the first socket and the recess is disposed on a second surface of the first socket; and

the second surface of the first socket is opposite to the first surface of the first socket.

5. The alignment fixture of claim 4, further comprising:

a retention member disposed proximate to the first surface of the first socket to limit elongation of the plurality of springs.

6. The alignment fixture of claim 1, wherein:

the first surface of the IC package comprises a plurality of conductive balls; and

the recess comprises a plurality of sockets dimensioned to receive the plurality of conductive balls.

7. The alignment fixture of claim 1, wherein:

individual magnets of the first and second magnet arrangements have a first polarity end, a second polarity end, and a longitudinal axis defined by the first and second polarity ends; and

individual magnets of the first and second magnet arrangements are oriented with longitudinal axes parallel to the first axis.

8. The alignment fixture of claim 7, wherein:

the first magnet arrangement includes four magnets disposed at four corners of a rectangle; and

two of the four magnets have a first polarity and are disposed at diagonal corners, and two of the four magnets have a second polarity different from the first polarity and are disposed at different diagonal corners.

9. The alignment fixture of claim 1, wherein:

individual magnets of the first and second magnet arrangements have a first polarity end, a second polarity end, and a longitudinal axis defined by the first and second polarity ends; and

individual magnets of the first and second magnet arrangements are oriented with longitudinal axes perpendicular to the first axis.

10. The alignment fixture of claim 9, wherein the first magnet arrangement includes four magnets disposed at four corners of a rectangle.

11. The alignment fixture of claim 9, wherein:

the first socket includes a side wall; and

the first magnet arrangement is at least partially disposed in the side wall.

12. The alignment fixture of claim 11, wherein:

the side wall defines a rectangle;

the first magnet arrangement includes two magnets on different sides of the rectangle and proximate to a first corner of the rectangle; and

the first magnet arrangement includes two magnets on different sides of the rectangle and proximate to a second corner of the rectangle.

13. The alignment fixture of claim 9, wherein, when the first and second sockets are mated:

a longitudinal axis of a magnet of one magnet arrangement is oriented parallel to the longitudinal axes of two magnets of another magnet arrangement;

the longitudinal axis of the magnet of the one magnet arrangement is disposed between the longitudinal axes of the two magnets of the another magnet arrangement in a direction perpendicular to the longitudinal axis of the magnet;

the first polarity end of the magnet of the one magnet arrangement faces the first polarity ends of the two magnets of the another magnet arrangement; and

the one magnet arrangement and the another magnet arrangement are two different magnet arrangements selected from a group consisting of the first magnet arrangement and the second magnet arrangement.

14. The alignment fixture of claim 1, wherein, when the first and second sockets are mated, one or more magnets of the first magnet arrangement do not contact one or more magnets of the second magnet arrangement.

15. The alignment fixture of claim 1, wherein, when the first and second sockets are mated, a net magnetic force between the first and second magnet arrangements is a repulsive force.

16. The alignment fixture of claim 1, wherein, when the first and second sockets are mated, a net magnetic force between the first and second magnet arrangements is an attractive force.

17. The alignment fixture of claim 1, further comprising:

a housing including two or more recesses;

wherein:

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

18. A method of manufacturing an alignment fixture, comprising:

forming a first socket having a recess dimensioned to receive a first surface of an integrated circuit (IC) package, wherein the IC package has a second surface opposite to the first surface and has a first electrical contact element on the second surface;

providing a first magnet arrangement to the first socket, wherein the first magnet arrangement is disposed outside of the recess;

forming a second socket;

providing a second magnet arrangement to the second socket; and

providing a second electrical contact element to the second socket;

wherein the first and second electrical contact elements are aligned when:

the IC package is disposed in the recess,

the IC package is disposed between the first and second sockets along a first axis, and

the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement to mate the first and second sockets.

19. The method of claim 18, wherein providing the first magnet arrangement to the first socket includes securing a magnet by friction fit in a magnet recess of the first socket.

20. The method of claim 19, wherein the magnet recess of the first socket has a chamfered opening.

21. The method of claim 18, wherein the second electrical contact element comprises a conductive pin.

22. The method of claim 18, further comprising:

coupling the second socket to a housing;

wherein the housing includes two or more recesses;

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

23. A method of testing an integrated circuit (IC) package, comprising:

positioning a first surface of the IC package in a recess of a first socket, wherein the first socket has a first magnet arrangement disposed outside of the recess, the IC package has a second surface opposite to the first surface, and the IC package has a first electrical contact element on the second surface;

after positioning the first surface of the IC package in the recess, mating a second socket with the first socket, wherein, when mated:

the second socket has a second electrical contact element and a second magnet arrangement,

the first magnet arrangement is in a predetermined equilibrium relation with the second magnet arrangement,

the IC package is disposed between the first and second sockets along a first axis, and

the first and second electrical contact elements are aligned; and

transmitting an electrical signal, via the first and second electrical contact elements, between the IC package and test equipment coupled with the second socket.

24. The method of claim 23, further comprising:

prior to mating the second socket with the first socket, coupling the second socket to a housing;

wherein:

the housing includes two or more recesses;

the second socket includes two or more projections extending into corresponding ones of the two or more recesses in the housing, and

the second socket is movable, with respect to the housing, in a direction of the first axis and in a direction perpendicular to the first axis.

25. The method of claim 23, wherein at least one magnet of the first magnet arrangement has a diameter of approximately 1/16 of an inch.