Claims

1. An automated test equipment (100) for testing semiconductor devices (280), the test equipment (100) comprising

a test handler (110),

a spare part (140), in particular a contact socket (141), and

a semiconductor devices tester (120),

wherein the spare part (140) comprises an electronic component (142) for storing and/or processing data regarding the spare part (140) or a portion thereof, and

wherein the test equipment (100) comprises a data buffer unit (500) comprising a data exchange interface (154) which is connected or connectable to the electronic component (142) within the spare part (140), for buffering data stored therein.

2. An automated test equipment (100) for testing semiconductor devices (280), the test equipment (100) comprising

a test handler (110),

a spare part (140), in particular a contact socket (141), and

a semiconductor devices tester (120),

wherein the spare part (140) comprises an electronic component (142) for storing and/or processing data regarding the spare part (140) or a portion thereof, in particular according to claim 1, wherein the test equipment (100) comprises an operator terminal (130) comprising a display (131) or GUI (139) and a data exchange interface (152) which is connected or connectable to the electronic component (142) within the spare part (140), for at least displaying data stored therein.

3. An automated test equipment (100) for testing semiconductor devices (280), the test equipment (100) comprising

a test handler (110),

a spare part (140), in particular a contact socket (141), and

a semiconductor devices tester (120),

wherein the spare part (140) comprises an electronic component (142) for storing and/or processing data regarding the spare part (140) or a portion thereof, in particular according to claim 1 or 2, wherein the test equipment (100) comprises a maintenance planning and control unit (104) comprising a processing unit (105) and a data exchange interface (154) which is connected or connectable to the electronic component (142) within the spare part (140), for planning and controlling maintenance actions of the test equipment (100).

4. An automated test equipment (100) for testing semiconductor devices (280), the test equipment (100) comprising

a test handler (110),

a spare part (140), in particular a contact socket (141), and

a semiconductor devices tester (120),

wherein the spare part (140) comprises an electronic component (142) for storing and/or processing data regarding the spare part (140) or a portion thereof, in particular according to one of claims 1-3,wherein the test equipment (100) comprises a dedicated database (107) residing in a control computer (106), and a data exchange interface (154) which is connected or connectable to the electronic component (142) within the spare part (140), for storing data regarding a working setup for the spare part (140) in the database (107) for use by the test handler (110).

5. The automated test equipment (100) of one of the preceding claims, wherein the spare part (140) comprises a temperature sensor (142s) and/or a pressure sensor (142s) and/or an acceleration sensor (142s) and/or an ESD sensor (142s) and/or a touchdown counter (142s), each internally connected to the electronic component (142).

6. The automated test equipment (100) of one of the preceding claims,

wherein the electronic component (142) comprises a programmable microcontroller (142n) and/or a memory (142m), in particular an EEPROM (142m), which in particular is temperature-stable up to 175 °C.

7. The automated test equipment (100) of one of the preceding claims, wherein the spare part (140) comprises a unique ID tag and the data exchange interface (152, 154) is adapted to transmit the ID tag to outside the spare part (140).

8. The automated test equipment (100) of one of the preceding claims, wherein the spare part (140) comprises a spare part interface (240i) adapted to be connected to the data exchange interface (152, 154).

9. The automated test equipment (100) of one of the preceding claims, wherein the data exchange interface (152, 154) is, at least in part, common for the operator terminal (130) and the buffer unit (500) and/or the maintenance planning and control unit (104) and/or the dedicated database (107).

10. The automated test equipment (100) of one of the preceding claims, wherein the operator terminal (130) comprises a handheld computer (109) which comprises means for processing data obtained from the electronic component (142) within the spare part (140) and/or for sending data and/or instructions to the electronic component (142).

11. The automated test equipment (100) of claim 10, wherein the handheld computer (109) comprises an internet interface (156) for at least temporarily connecting it to the internet, in particular for upgrading the handheld computer (109) and/or for receiving maintenance instructions and/or firmware updates regarding the test equipment (100) through the internet.

12. The automated test equipment (100) of one of claims 2-11,

wherein the data buffering unit (500) is adapted to address multiple spare parts (140, 140', 140'') and in particular comprises a microcontroller (502) which is adapted to process data from multiple spare parts (140, 140', 140'') and/or to derive data and/or instructions for multiple spare parts.

13. The automated test equipment (100) of one of claims 2-12, wherein the data buffering unit (500) is located on a board (503) which is connected or connectable to multiple spare parts (140, 140‘, 140^) or is located on an interchangeable interface board (504).

14. The automated test equipment of one of claims 3-13, wherein the maintenance planning and control unit (104) is adapted to derive maintenance instructions based on data regarding and obtained from the spare part (140) and in particular includes a data statistics unit and/or a predictive maintenance triggering unit and/or a failure pattern recognition unit and/or an emergency stop triggering unit.

15. The automated test equipment of one of claims 4-14, wherein the dedicated database (107) comprises information regarding a test floor and/or a site fleet performance and/or sensor data and/or operations data and/or power monitoring data regarding specific tests.