Documentation when working on a PC or notebook

Before replacing electronic components, a certain level of technical knowledge is required. If you do not have this knowledge, it is better to leave this replacement to certified specialist companies. Damage caused by improper use can result in subsequent costs.

Determining the fault: Have you really located the fault? A guess is not enough here! Simply installing components and seeing whether this has eliminated the fault: this is not a solution. If you are not sure, have a specialist company check them beforehand. **The electronic goods must not be used for testing purposes!**

If it is clear which component is defective, the so-called FRU (article number) should be determined on the component. Only this FRU fits in your device as a replacement part.

Important! All components must be installed before you can test the device. Health and safety when working with electricity and static charge takes priority here.

The following is important when working on a computer:

1. The computer must be disconnected from the power supply. For notebooks: remove the battery. As there may still be a small amount of voltage, press the power button several times.
2. It is essential that the device is grounded before opening. Static charge!

3. Open the device carefully.
   Note: Before replacing components such as the mainboard, deactivate the bit blocker!
4. **Notebooks may have an internal battery installed. Unplug the connector on the mainboard and press the power button several times to remove the residual voltage.**
5. Now replace the component carefully. Only use tools specially made for this purpose to avoid damage. Most components are delivered in antistatic packaging. Only unpack after grounding!
6. After installing the new replacement part, check your procedure again. Have you connected all components correctly? Are all cables correctly seated? Then you can reconnect the internal battery (if present) and close the device.
7. Connect the device to the power supply. For notebooks, to the power supply unit.

When installing motherboards: the start is delayed. This can take up to 1-2 minutes. The following messages then appear on the screen. This can be different for each manufacturer. Here is one from Lenovo:

- **Meldung: 1802 Date/Time is invalid.**
- **Meldung: 2200 Machine Type and Serial Number are invalid**
- **Meldung: 2201 Machine UUID is invalid**
- **Meldung: 2202 Product name is invalid**

To eliminate these messages you need a special tool called "Golden Key". With this tool you have to enter the serial and model number as well as the UUID and product name.

There is no defect on the motherboard!

8. Then perform a detailed hardware test of the device.
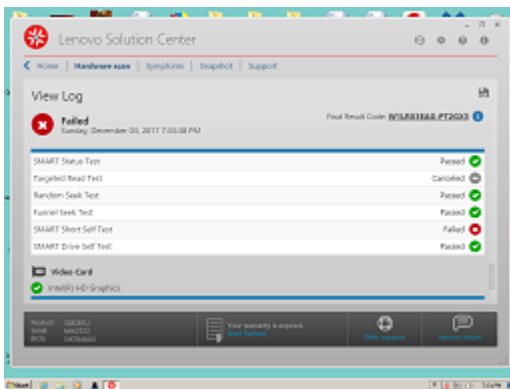
Quick facts:

1. Determine the exact fault

2. Determine the article number of the defective part

3. Disconnect the device from the power supply. In notebooks, also the battery

4. Press the power button several times (residual current)

5. Establish a grounding connection

6. Open the device carefully

7. Replace the spare part carefully. Secure the tool against slipping

8. Check the procedure again after completion

9. Close the device

10. Reconnect the device to the power supply (in notebooks, the power adapter)

11. Perform a hardware test