

2012.12.12

## How to improve reliability of PCB equipments

### ① Simplified design of PCB equipment.

When we designed the PCB equipments, we should try to simplify circuit and structure design that on the premise of ensuring the equipments to meet the technology and performance. In modern society, [modules design](#) (MD) is an effective measure to improve the PCB equipment reliability. The system was made up of simple functions of modules to reduce the complexity of the design. Both domestic and abroad, a large number of facts have proved this point, MD was a best choice for PCB equipment design.

### ② Adopted modules and standard parts.

Modules and standard parts were proved the reliable products through plenty of tests and widely uses. Thus, they can fully eliminate disadvantages and hidden troubles of PCB equipment and that easy to replace parts and repair after problems came up. Otherwise, the development cycle could be shortened greatly for providing a favorable condition of updating.

### ③ Improve the integration of PCB

Choose all kinds of [powerful](#), high integration density, large scale integrated circuit and reduce the number of components.

### ④ Derating design

Derating design is a condition that components working in less than its nominal stress. It is an effective measure for reducing unavailability of components. Therefore, on the premise of technical performance of components, from working voltage range, thermal properties, electrical characteristics parameters are taken derating, so as to reduce the components in various stress conditions of the failure rate.

### ⑤ Selection of high quality components.

Components is the basic unit of PCB equipment, its quality will directly affect reliability of the PCB equipment.

### ⑥ Reliable structure, Mature technology

When we designed circuit structure, should try to reduce connectors and amount of the through-hole circuit devices would be welded directly on the PCB to avoid bad contact.

### ⑦ Failure indicating device.

Design fault detection alarm device, in order to find faults timely, so as to shorten the maintenance time of PCB equipment.

### ⑧ Simple operation and convenient maintenance.

Operation and maintenance are the important factors of reliability. The design should be adopted

[modularized](#), standardized and [quick knockdown](#) structure. It's [convenient](#) to operation and mantance.