



What is needed at the EMC LAB

A Checklist including equipment for the EMC test.

In order to enable the EMC test or EMC troubleshooting to be carried out with as few problems as possible, DELTA has assembled a range of information and things which, experience has shown, are necessary.

The list is divided into equipment that is necessary for the actual EMC test itself and additional equipment that may be used in the event of carrying out EMC troubleshooting.

Equipment for the EMC test

- The device, Equipment under test (EUT), that is to be tested
- An additional device, in case the first should fail or get broken
- Alternatively, additional modules and subassemblies
- Cables and wires for all external connectors
- An additional set of cables with connectors, as certain tests require a shortening of the cables to approx. 30 cm.
- In the case of a surge test on shielded cables, cables of a length of 20 m must be used. The cable must be of the type that is used with the product
- Signal sources and signal generators that are necessary for the EUT to function
- Additional equipment necessary to monitor the EUT and to determine whether or not the EUT is behaving correctly during the test
- A short and unequivocal operating manual that describes how to set up the EUT and external equipment as well as handling any fault situations that may occur

Additional equipment in EMC troubleshooting tasks

- Special tools
- Diagrams
- PCB diagrams
- Component location
- Additional modules
- Spare parts/components
- Protective components that room has been made for in the device, but that have not been mounted

Functionality must be ensured during testing

It should be ensured that the EUT maintains functionality for a long period. The test lasts approx. 30 min. It will be very time-consuming if the EUT has to be activated several times during testing. This would affect the price of testing.

EMC test software provides test flow

If appropriate, special EMC testing software can be written to ensure that the parts of the device are activated and kept running, or monitored, during the whole test.

Monitoring of performance

It is important to monitor all relevant parameters, so it can be decided whether the EUT meets the performance criteria.

There can often be a benefit in writing special testing software to log relevant values during testing and at the same time to give a clear and unequivocal indication that everything lies within the established performance criteria.

Equipment placed outside the shielded room

If the EUT is to be monitored or controlled from equipment placed outside the shielded room, it must be possible to feed the interface cables through the ferrite box and shielding wall.

The opening is approx. 19 mm. The connector can be removed if required and reattached once the wire has been pulled through. The cable length should be approx. 20 m.

In the case of cables attached to the lead-in connectors in the shielding wall, a cable of 6-8 m should be used as far as the lead-in connector, together with a cable of approx. 2 m for use outside the shielded room.

Normally the decision is made to place the equipment outside the shielded room in order to delimit the assembly and thereby remove the units' influence on the test.