

## CTL DECISION SHEET

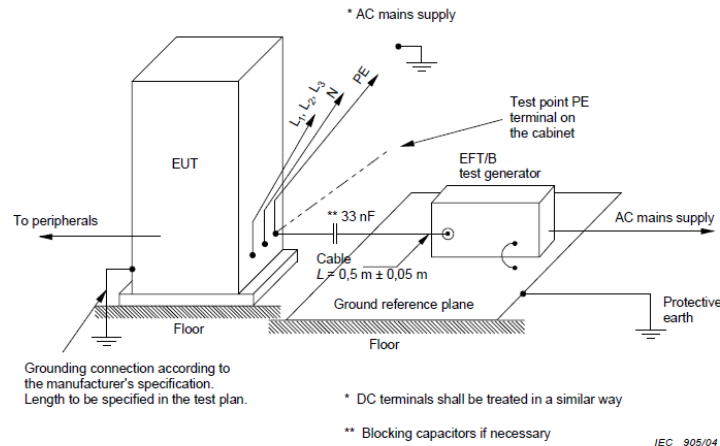
<b>Standard(s):</b> IEC/EN 61000-4-4 : 2004	<b>Sub clause:</b> 7.2.2.3 and figure 11	<b>DSH:</b> 734
<b>Subject:</b> Application of bursts on cabinet earth point	<b>Key words:</b> - burst - earth point - application	<b>Decision approved</b> during the 46 <sup>th</sup> CTL plenary meeting 2009

**Question:**

For EFT testing, IEC-61000-4-4: 2004, Clause 7.2, test set-up for type tests performed in laboratories, has 3 conditions for coupling the test voltage to the Equipment Under Test: Clause 7.2.2.1 Power supply ports, Clause 7.2.2.2 I/O and Communications Ports and Clause 7.2.2.3 Cabinet Earth Port.

For power supply ports, Clause 7.2.2.1, Figure 9 is referenced which indicates a common mode coupling. So for a single phase product with a PE conductor, the coupling would be L+N+PE and for a 3 phase product the coupling would be L1+L2+L3+PE or L1+L2+L3+N+PE. This is fairly clear and straight forward.

However, for the cabinet earth port, Clause 7.2.2.3, the standard states: "The test point on the cabinet **shall** be the terminal for the protective earth conductor..." as shown in Figure 11. Figure 11, reproduced below for convenience, is for post-test installation tests and for floor standing devices. Yet, if you look at figure 11, the PE test point that is referenced in Clause 7.2.2.3 is the same test point as PE in the supply port coupling path.



**Components**  
 PE protective earth  
 N neutral  
 L1, L2, L3 phases

**Figure 11 – Example for post-installation test on a.c./d.c. power supply ports and protective earth terminals for stationary, floor-mounted EUT**

For laboratory tests on any floor standing or table top product, should the PE port be tested as a stand alone test point after the application of the common mode test on all lines, including PE, or is this a test only applicable, if a separate earth point is provided on the product?

In other words, does PE get tested by itself since Clause 7.2.2.3 indicates the test point on the cabinet shall be the terminal for the protective earth, or is it sufficient to indicate that PE complies when tested as part of the supply port (for example L+N+PE) as long as a separate cabinet earth point is not available on the product?

**Decision:**

PE as a part of the mains cable is not the same as the “cabinet earth point”. The test on the “cabinet earth point” will only be applicable if called out in a product or a product family standard. It is removed in the most recent versions of generic standards. Clause 7.2.2.3 addresses additional earth points on the cabinet, if available.