New Immunity Standards in Force - July 1, 2001

Introduction

Recently there have been two new Immunity standards published in the Official Journal (OJ) that will affect how a manufacturer shows compliance to the EMC Directive for Europe. Most manufacturers have been using the generic immunity standard EN 50082-1:1992 to show compliance to the immunity portion of the Directive. This standard has been revised and published in the OJ as EN 50082-1:1998. The 1998 version will replace the 1992 version on July 1, 2001, meaning that any new products or existing products that are placed on the European market after July 1, 2001 must comply with the new 1998 version of the standard. This is true even if your product is compliant to the 1992 version.

The other new standard that has been published is EN 55024:1998, Immunity of Information Technology Equipment (ITE). This is a product specific standard for ITE that supercedes the generic standards; therefore, equipment that falls within the scope of this standard must show compliance to EN 55024:1998. This standard becomes mandatory for ITE on July 1, 2001, meaning that any new products or existing products that are placed on the European market after July 1, 2001 must comply with this standard. This is true even if your product is compliant to the EN 50082-1 generic standard (1992 or 1998 version).

What Test are Required

July 1, 2001 may seem like a long way down the road but it will be here sooner than we imagine. Manufacturers must now decide when to start testing to these new standards. Some of the considerations are the cost to show compliance, and whether or not the product will still be sold after July 1, 2001. Any product that is intended to be sold after July 1, 2001 must comply as indicated above; therefore, when should you as the manufacturer start testing to these standards? Shown below is a comparison between the 1992 generic standard and the new 1998 version of the generic and ITE standards.

Name of Test	EN 50082-1: 1992	EN 50082-1: 1998	EN 55024: 1998
Electrostatic Discharge (ESD) / EN 61000-4-2	8 kV Air	± 4 kV Contact ± 8 kV Air	± 4 kV Contact ± 8 kV Air
Radio-frequency Electromagnetic Field Amplitude Modulated / EN 61000-4-3	27 – 500 MHz 3 V/m Unmodulated	80 – 1000 MHz 3 V/m 80% AM Modulated (1 kHz)	80 – 1000 MHz 3 V/m 80% AM Modulated (1 kHz)
Radio-frequency Electromagnetic Field Keyed Carrier / ENV 50204	Not Required	900 ± 5 MHz 3 V/m 50% Duty Cycle 200 Hz Rep. Frequency	900 ± 5 MHz 3 V/m 50% Duty Cycle 200 Hz Rep. Frequency
Electrical Fast Transients / EN 61000-1-4	±0.5 kV (Signal Lines) ±0.5 kV (DC Ports) ±1.0 kV (AC Ports)	±0.5 kV (Signal Lines) ±0.5 kV (DC Ports) ±1.0 kV (AC Ports)	±0.5 kV (Signal Lines) ±0.5 kV (DC Ports) ±1.0 kV (AC Ports)
Lighting Surge / EN 61000-4-5	Not Required	Signal Lines – Not Required ±1.0/±0.5 kV (AC /DC Ports) Line to Earth ±2.0/±0.5 (AC /DC Ports) Line to Line	Signal Lines – ±1.0 kV Line to Ground (See Note 2 and 3) ±1.0/±0.5 kV (AC /DC Ports) Line to Earth ±2.0/±0.5 (AC /DC Ports) Line to Line
Radio-frequency Common Mode (Conducted Immunity) / EN 61000-4-6	Not Required	0.15 – 80 MHz 3 V/m 80% AM Modulated (1 kHz)	0.15 – 80 MHz 3 V/m 80% AM Modulated (1 kHz)
Power-frequency Magnetic Field / EN 61000-4-8	Not Required	50 Hz 3 A/m See Note 1	50 Hz 3 A/m See Note 1
Voltage Dips / EN 61000-4-11	Not Required	30% Reduction 10 ms 60% Reduction 100 ms	30% Reduction 10 ms 60% Reduction 100 ms
Voltage Interruptions / EN 61000-4-11	Not Required	>95% Reduction 5000 ms	>95% Reduction 5000 ms

Note 1: Applicable only to apparatus containing devices susceptible to magnetic fields, such as Hall elements, electrodynamic microphones, magnetic field sensors, etc.
Note 2: Applicable only to ports which according to the manufacturer's specification may connect directly to outdoor cables.
Note 3: Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, not test shall be required.

Conclusion

In order to sell products in Europe after July 1, 2001 manufacturers should start preparing to comply with the above mentioned standards. Management will need to budget for the added expense required to perform the additional tests and the design teams must be aware of the tests to which their products will be subjected. An early start will benefit your company down the line and enable you to make a smooth transition to the July 1, 2001 deadline.