Your guide to CE MARKING

by Gareth Bradley

IN PART 2 OF CE MARKING, GARETH BRADLEY LOOKS AT THE DIFFERENCES AND EFFECTS CREATED BY PRE-COMPLIANCE OR COMPLIANCE.

The question that needs to be asked is: If compliance testing can prove your product and place the CE marking on your product, why precompliance testing?

The answer is simple.

Precompliance testing can be done during the development stage of the project. It is a quick look at your products EMC performance during the prototype stage. This is to get an idea of how well the product will perform in a full compliance test. Although the pre compliance test does not adhere so strictly to the standards it should be done in a meaningful way. The idea behind it is to bring down the level of uncertainty. It is no good testing in such a way that the level of uncertainty is so high that any measurements obtained are so out that they give no real indication that the product will pass a full compliance test. In extreme cases the measurements taken might lead you into believing that the product will pass when in reality it will fail.

If precompliance testing is not done and the product is sent for compliance testing, when the product goes into production, there is no guarantee that the product will pass or fail. If it passes then you are lucky, if on the other hand the product fails it can cause huge problems depending on the product and the nature of the failure. What can be done to solve the problem? There are a few things that can be done, but these will unavoidably add cost to your product and delay the time involved in getting your product to market.

Things like adding shielding, conductive paint and filters, all these can all contribute towards reduction of your EMC problem but used as a cure rather than a preventative measure , they can add to your product cost, time to market and it can become a nightmare for production. In drastic situations it may be necessary to take the product back to the drawing board and start the design over again. This will most certainly add extra unwanted time and expense. It is far better to incorporate these into the design stage and have them accounted for in the initial costing should your product need them.

Pre-compliance can help solve this problem, it can find EMC propels early on in the prototype stage where the problems are easier, cheaper and quicker to fix. Pre-compliance testing is quicker and cheaper to have done. Some companies even set up there own pre-compliance facility because pre-compliance test equipment does not have to be as accurate as full compliance and therefore a lot cheaper which brings it into the said companies budget. Also pre-compliance can provide useful test data which can help you pinpoint potential problems of where the product would fail in full compliance testing. This data can be used for reference for any future projects and help predict the EMC characteristics of your design. As the tests involved in pre-compliance are not as strict as full compliance the time taken to test is a lot shorter. For instance for emissions for full compliance, testing would require all four sides testing for maximum emissions (6 sides if the product can be hand held and has no orientation for use) whereas in pre-compliance an educated decision can be made as to which side will give maximum emissions and test the product just on that one side, once again saving time and money and a big disappointment when the company realises that the product in question which is now all ready for production and shipping out to the market place fails the test. This product can not go out until the EMC propels are addressed and sent back for further full compliance testing, therefore it makes sense to use pre-compliance.

More and more companies are going over to in-house pre-compliance, the cost is more affordable for some companies. Some of the issues to be considered when thinking about an in-house pre-compliance test facility are does the amount of testing that you will be doing warrant it compared to shipping out to a outside test house for your testing to be done. How long would the equipment take to pay for itself compared to the amount you will save from doing the testing in-house, Also each pre-compliance will be different, your new in-house pre-compliance test facility might vary in test results when compared to a known test house. It is a good idea to try and get your results as close to a known good test house as possible thus bringing your degree of uncertainty down. One way of doing this is to send a product for testing at a recognised test house and then doing tests in your own pre-compliance facility and seeing just how close the results are.

The equipment needed for pre-compliance will vary depending on what it is you want to test. The physical size of your product will define what set up to use. If your product is fairly small then there are set-ups available where to do RF immunity testing normally requires a large screened room, others would only require a small screened cell. There are companies that deal with pre-compliance equipment. They have different solutions depending on your products . It is a good idea to shop around to find the most suitable place for your particular product.

Useful links

www.laplaceinstruments.com
Advice on:
Self test and certifying.
Pre-compliance
Product Design
Product testing

www.ml-electronics.co.uk/emctest.htm
Pre-compliance testing

www.compliance-club.com
EMC compliance journal
Useful information.
Guide to EMC directive and standards.