Evaluation and Analysis of Machine Tool EMI/EMC On-Site Testing

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ABSTRACT

Taiwan machine tool production in 2004 has raised to the amount NT$96,500 million owing to the demand Mainland China market. This is the highest amount over the recent years and in turn pushes Taiwan global rank to fifth position. However, the design, research and development of industrial mechanical equipment are facing the same problem. These problems at hand, are designing different kind of electronic equipment compatible on one machine functioning properly simultaneously without compromising the individual efficiency as well as interfering with the normal function of other electronic elements and the question of electromagnetic compatibility (EMC). This thesis will discuss the variation of RE measurement in different sites between OATS and manufacturing factory. The principle is to build a standard signal source to generate a broadband interference, then to measure the interference in OATS and manufacturing factory in order to analyze the deviation between two sites. This method also presented some statistical data for calculating a very useful correction factor which can correct the data of RE measurement in situ. After correcting, the measurement inaccuracy can be reduced from 19.25dB to 4dB.

Keywords : EMC: Electromagnetic Compatibility, RE: Radiated Emission, CE: Conducted Emission, CS: Conducted Immunity

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