

正弦波を用いた TDR 法による特性インピーダンス測定法の開発

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Development of New Characteristic Impedance Measurement Method Using Sinusoidal Wave TDR

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Abstract

New measurement method for characteristic impedance of Printed Circuit Board was developed and its usability was demonstrated. This method is based on a conventional TDR method, but using burst sinusoidal wave modulated by step pulse as a input signal instead of direct step pulse. Characteristic impedances of 5m semi-rigid cable and 28 cm Microstrip PCB are measured at 70MHz-350 MHz frequency range using this new method. For the long cable the characteristic impedance can be measured consistently with the conventional method between 200 MHz to 350 MHz. For the short microstrip line however the measured values fluctuate in some extent. The reason for obtained results are discussed.

Key Words: TDR (Time Domain Reflectometry), Sinusoidal Wave TDR, Characteristic Impedance, Printed Circuit Board