

## **A study of EMI suppression characteristics of ferrite cores**

### **ABSTRACT**

Small-sized ferrite cores have commonly been attached to the mains and peripheral cables of electronic devices, but it is hardly known how effectively the cores can suppress EMI currents and how to use the cores in practical application. Hence, theoretical and experimental analyses are carried out to develop an appropriate method for evaluating the EMI suppression capability of the ferrite cores used in practical situations. First, a transmission line type measuring system is proposed for simulating the compliance test setup for the conducted emission. Then, theoretical expressions are derived to evaluate the EMI suppression characteristics of a ferrite core. In addition, to prove the validity of those theoretical equations, experimental studies are made using a simulated EUT and two actual EUT available in the market, that is, a desktop PC and a microwave oven.