Title: Simple calibration and dielectric measurement technique for thin material using coaxial probe

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Abstract: This paper focuses on the nondestructive dielectric measurement for thin dielectric material using open-ended coaxial probe. The probe calibration procedure requires only a measurement of a half-space air and three open standard kits. The measured reflection coefficient for thin sample, which is backed by metal plate, is taken with a vector network analyzer up to 7 GHz and the reflection coefficient is converted to relative dielectric constant and tangent loss via closed form capacitance model and simple calibration process.