CHAPTER 1

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CHARACTERIZING THE RESPONSE OF A GPR

Calibrating the response of a GPR system is essential for making measurements of subsurface materials properties. Duke (1990) calibrated the overall response of a GPR system by making measurements of the . . .

A least one paragraph of text must separate headings, subheadings and sub-sub headings.

1.1 **Background and Previous Work**

This chapter describes the methodology that has been used to determine the response of an impulse GPR. The characterization includes a response function for the receiving electronics, simulations . . . .

Subsection headings are flush with the left margin.

1.2 **Signal Processing Tools**

There are many techniques for making high frequency electrical measurements in electrical networks and antenna systems, and there are also many methods for manipulating the data from these measurements . . .

1.2.1 **Convolution and Deconvolution Methods**

Convolution is a mathematical operation that can be used to describe how a linear network element modifies a signal as the signal passes through it . . .

1.2.2 **Scattering Parameters**

Scattering parameters (S parameters) are often used to discuss the scattering of guided waves traveling in electrical networks (Smith, 1995) . . .

1.3 **The Response of the RTDGPR Receiving Electronics**

Stations k201 through k204 were recorded . . .

If there is not room for at least two lines of 1 1/2 or double-spaced text after the heading and before the bottom margin of the page, then place the heading at the top of the next page.