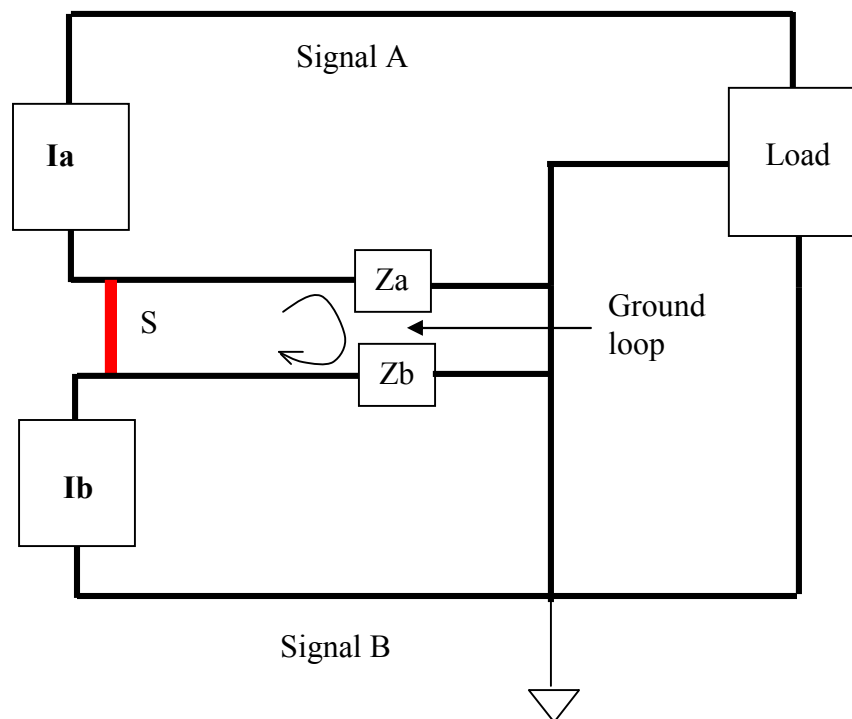


Ground loops

Description:

Definition: Ground refers to a common point where the various circuit returns are connected. In this context ground does not mean the connection to planet Earth. Current always returns to its source, through either an intentional or an accidental path. A simple definition of a ground loop may be “too many grounds”.



The short shown in red (or thicker line) creates a ground loop. Any magnetic flux that couples in this loop will cause large currents to flow in the loop because of the low impedances of the ground lines. This can cause all sorts of problems including burnt out traces and severe noise.

Signal Processing Group Inc., technical memorandum.

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In addition to this, the loop forms an antenna which can radiate and cause EMI (electromagnetic interference) and cause problems in unrelated parts of the circuit and nearby devices.

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