

Abstracts

A Limiting Filter for Application in a GPS Receiver

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A limiting filter is a new type of microwave circuit device that is essentially a filter modified by the addition of PIN diodes or other protection devices that give the filter nonlinear limiting properties in its passband. In one potential application, for protecting the front end of a microwave receiver, a limiting filter would prevent receiver interference from out-of-band signals, as well as avoid receiver upset or damage by limiting in-band rf transients. The design specifications for the front end of a commercial global positioning system (GPS) were used as a guideline for designing the limiting filter. Measurements of the prototype limiting filter are compared to theoretical calculations, and rather good agreement with measurements has been observed.

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