Abstracts

Current and Voltage Sensing in Act 'Block NDS' Transversal Filters

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Fixed ACT transversal filters look like apodized SAW transducers, but because they capacitively sense charge packets directly below the surface, the individual lines can be smeared together into two plates separated by a wavy boundary. In the conventional "voltage sense" approach, the shape of the gap is made to be the desired impulse response, and each side is loaded by an RC network. We describe a "current sense" approach, in which the shape of the gap is the integral of the desired impulse response, and the current which must oscillate from one Non-Destructive Sense (NDS) plate to the other is taken to be the output. Unlike voltage sensing, current sensing does not have a "DC pedestal" in its impulse response to create an undesired passband at low frequencies.

❑ Return to main document.