

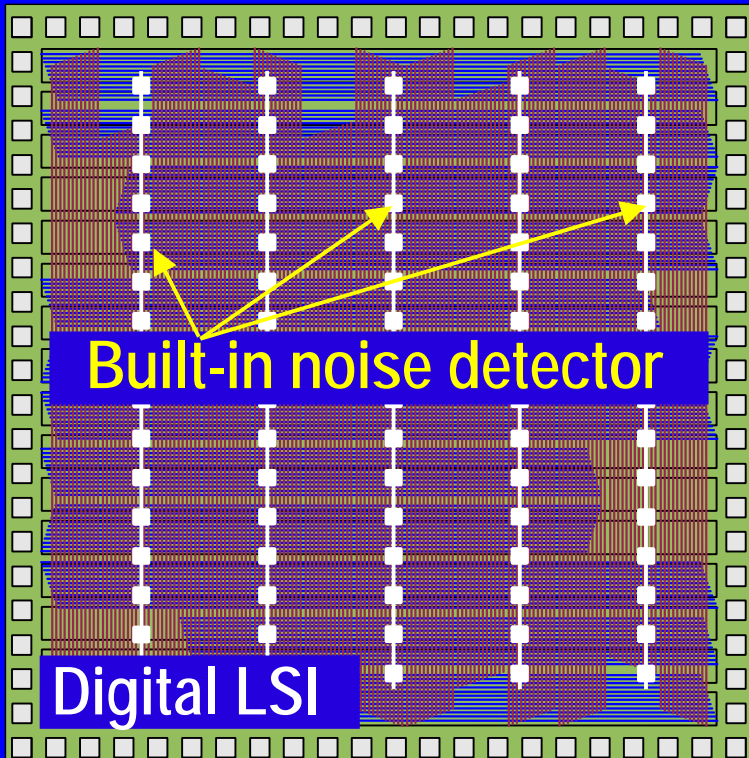
A Built-in Power Supply Noise Probe for Digital LSIs

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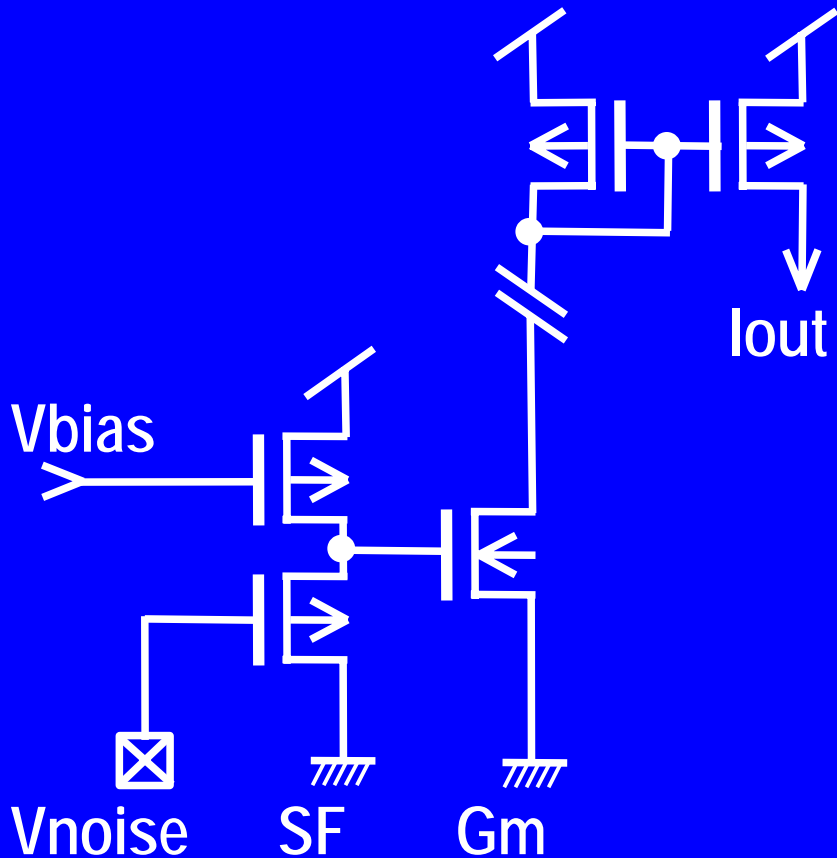
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Built-in noise probing technique

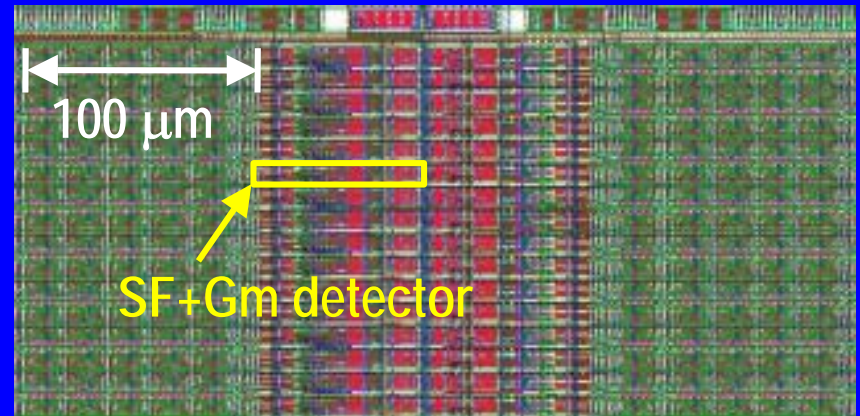


- Dynamic PS drop analysis
 - time-varying digital activity distribution
 - AC transfer characteristics of on/off chip LRC network
- Profile PS noise distribution
 - chip level
 - PS-grid resolution
 - vector-length acquisition

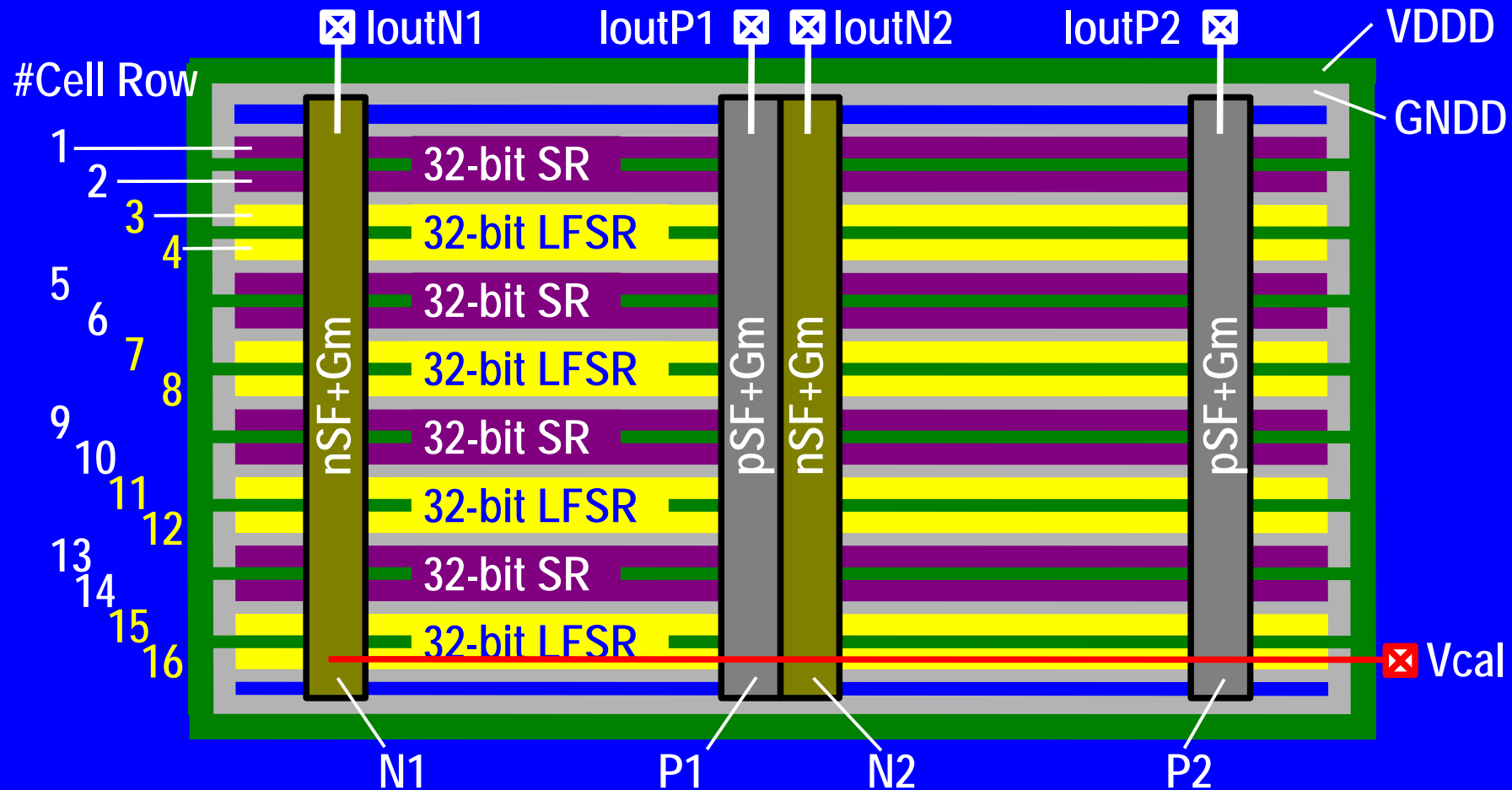
SF+Gm detector



- Simplest way of noise probing, w/o sampling
- Footprint comparable to D-type flip flop (FF) cell



Test circuit design



Measured dynamic drop waveforms

