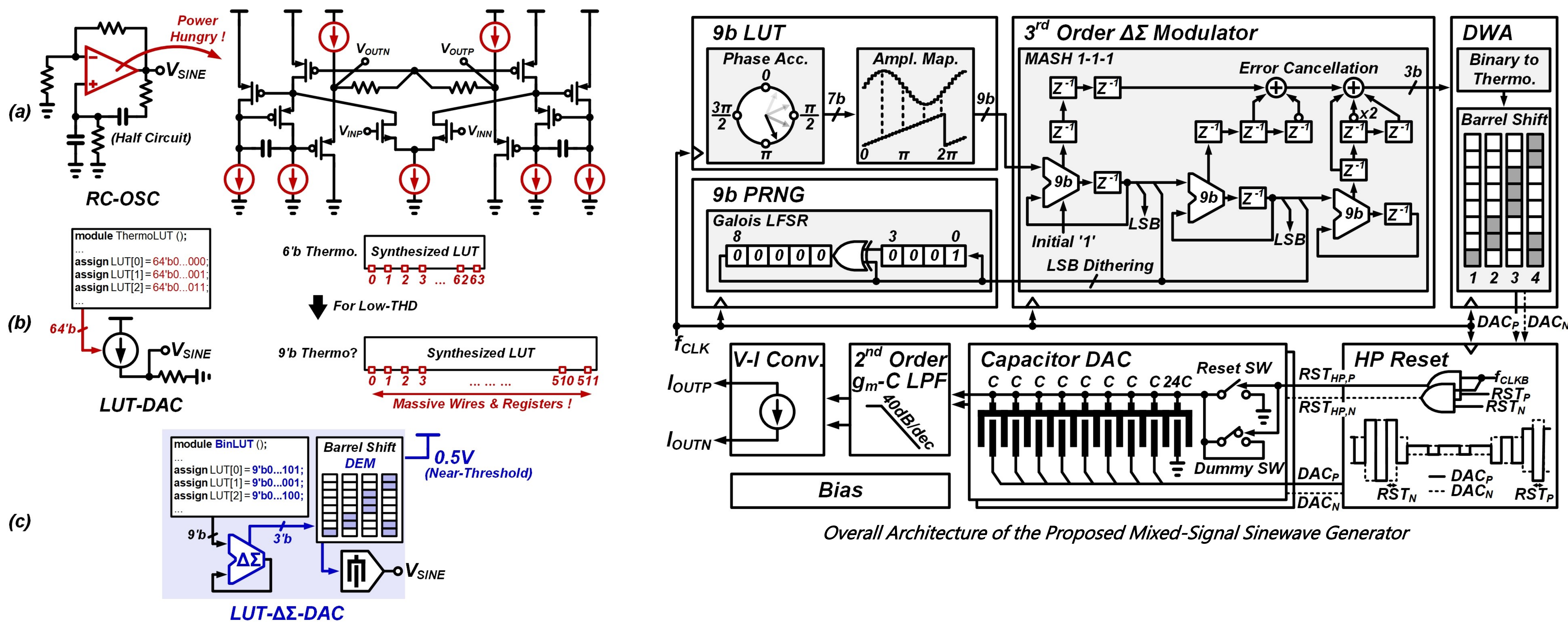


A 0.5V, 6.2 μ W, 0.059mm² Sinusoidal Current Generator IC with 0.088% THD for Bio-Impedance Sensing

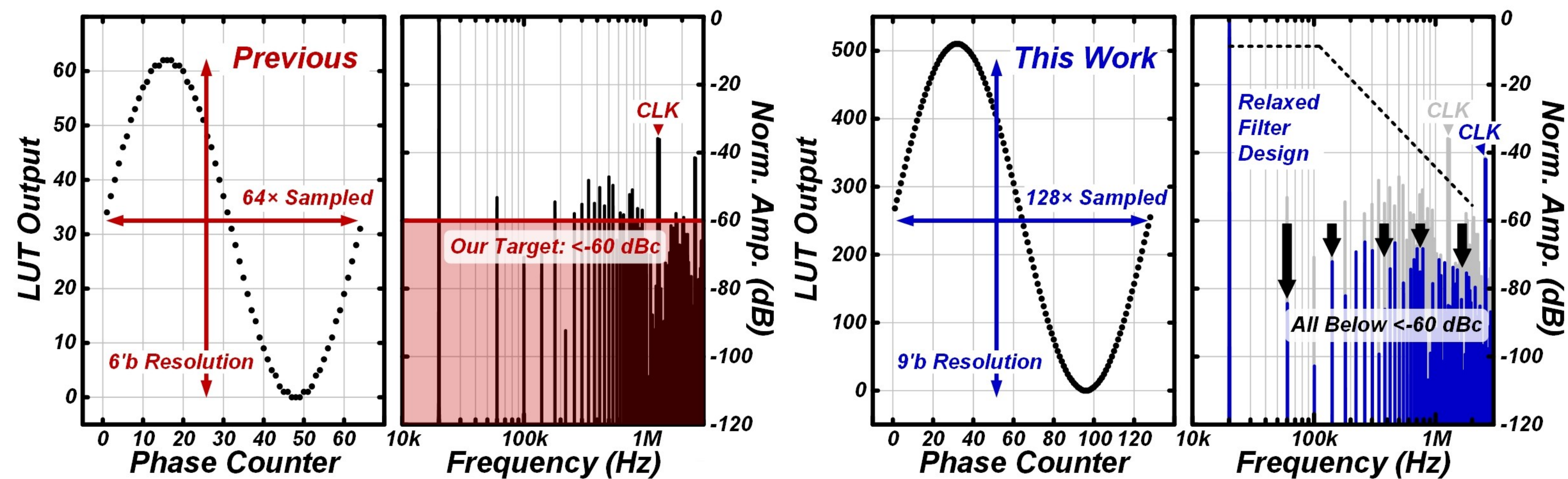
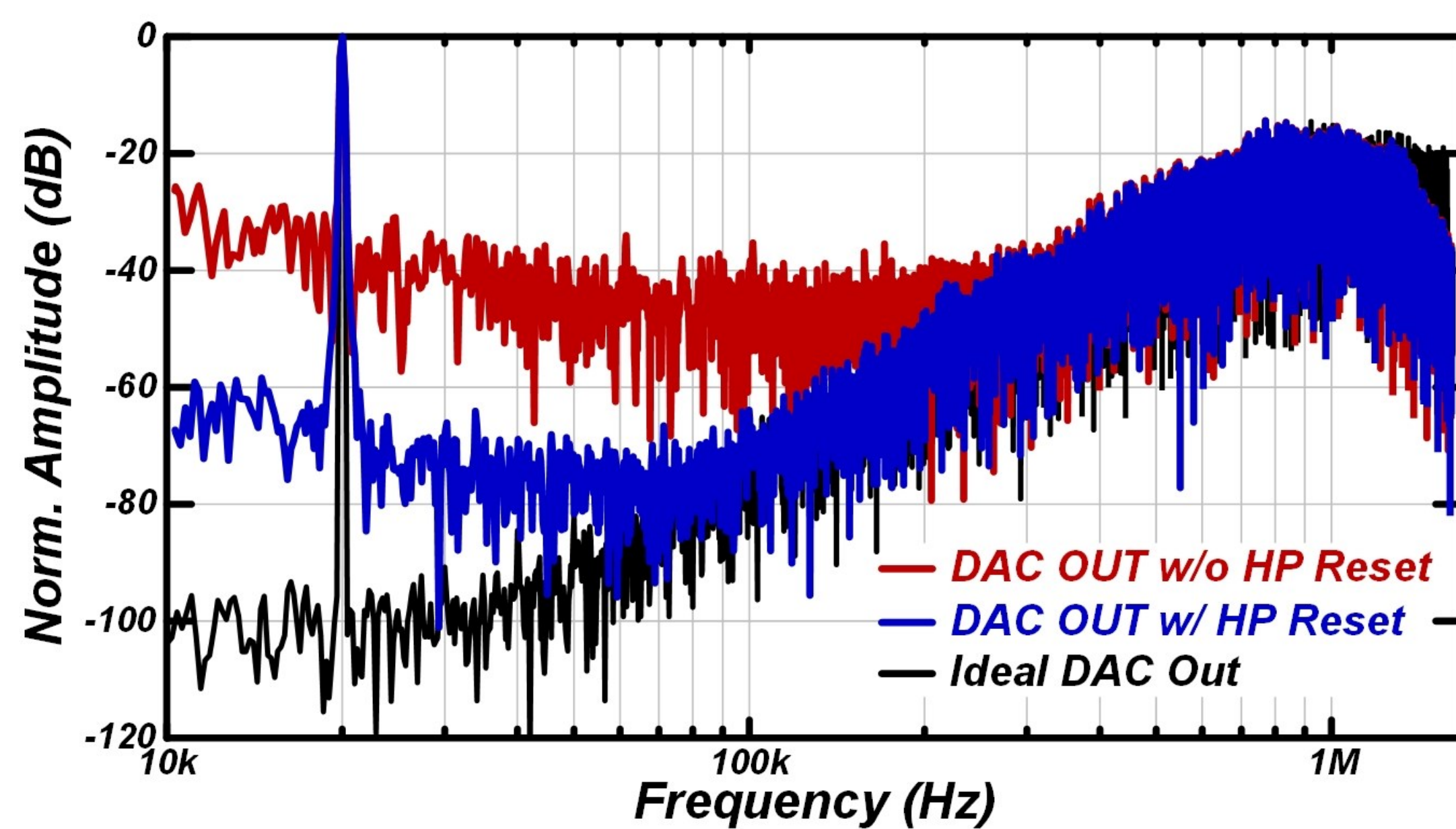
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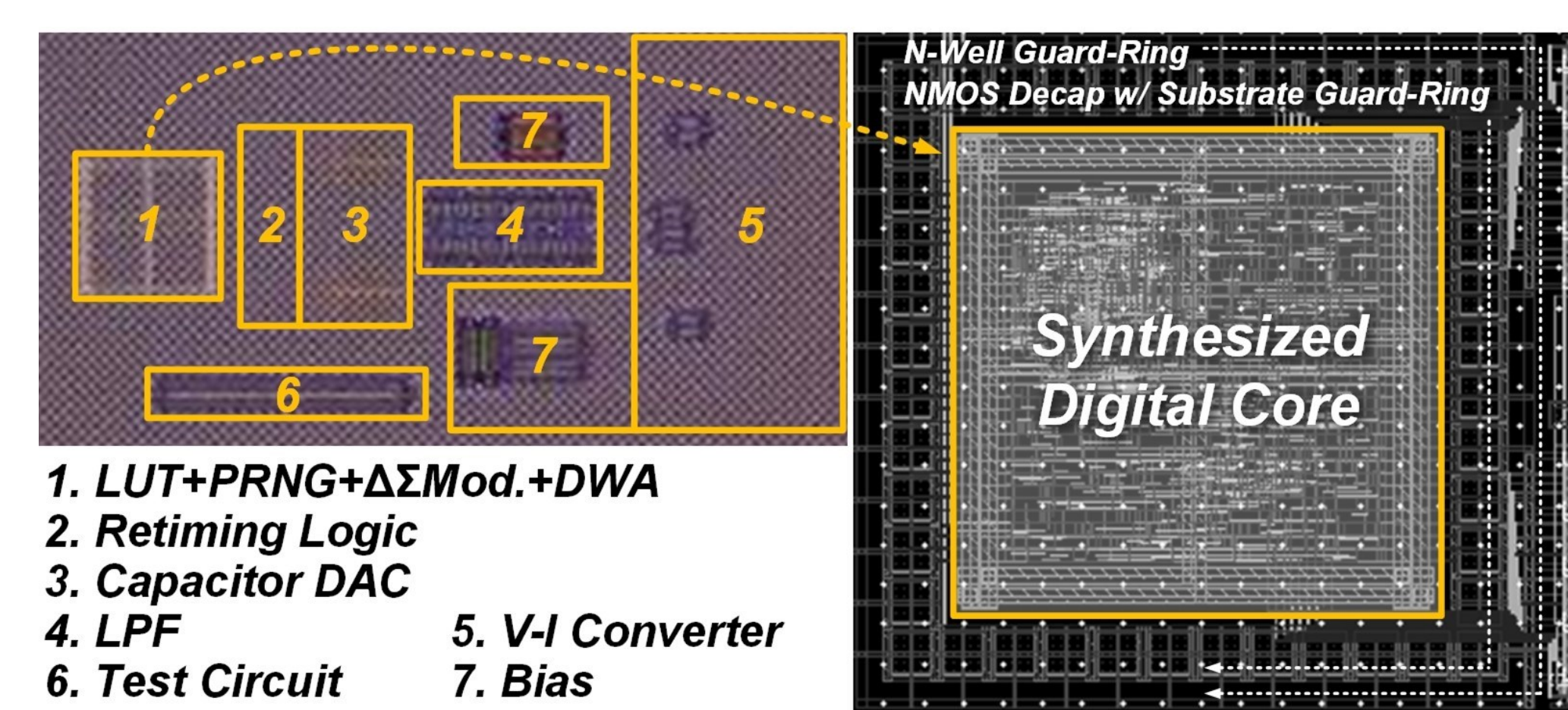
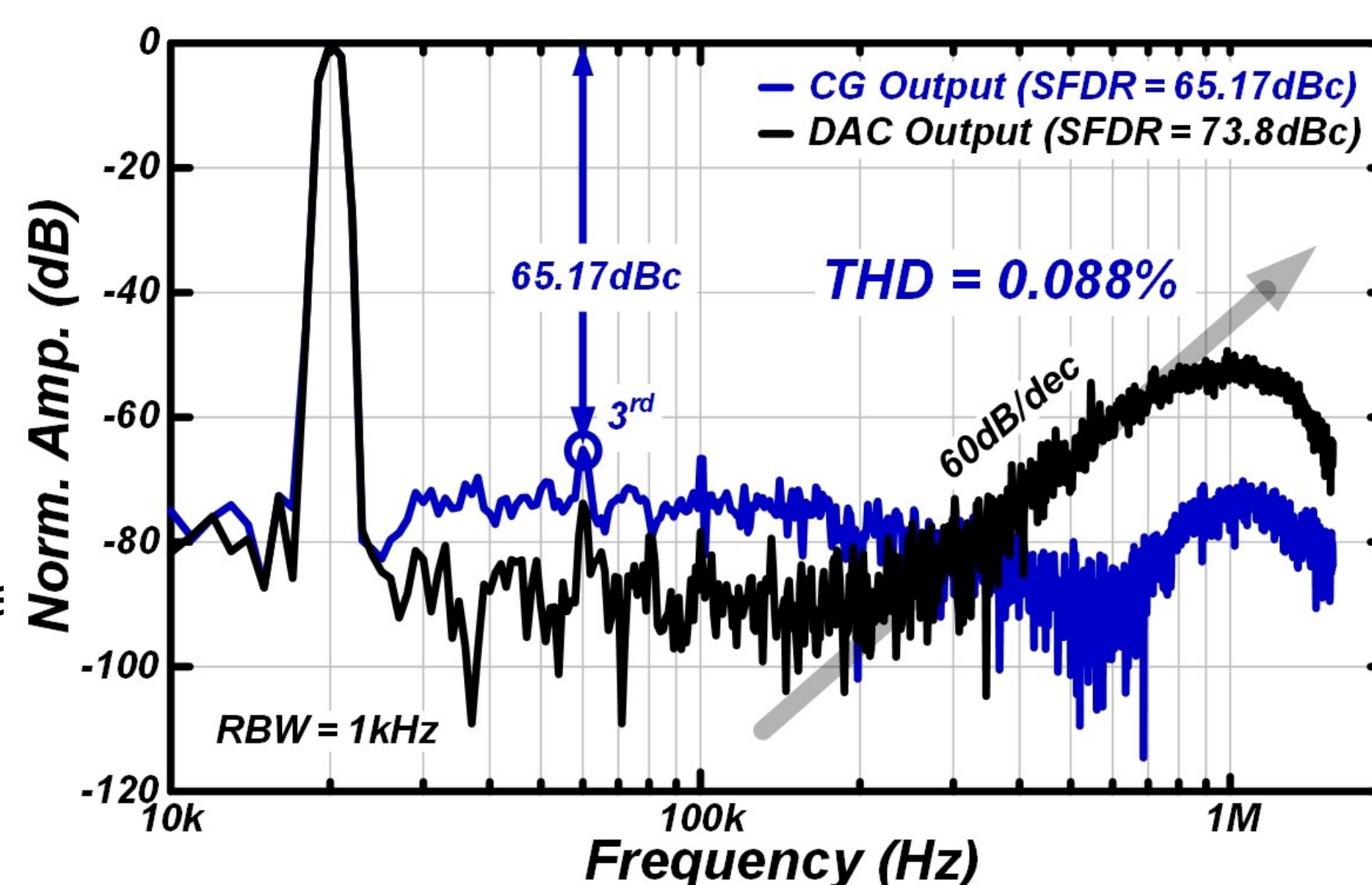
The First Sub-10 μ W, Sub-0.1% THD Sinusoidal CG IC for Bio-Z Sensing Applications



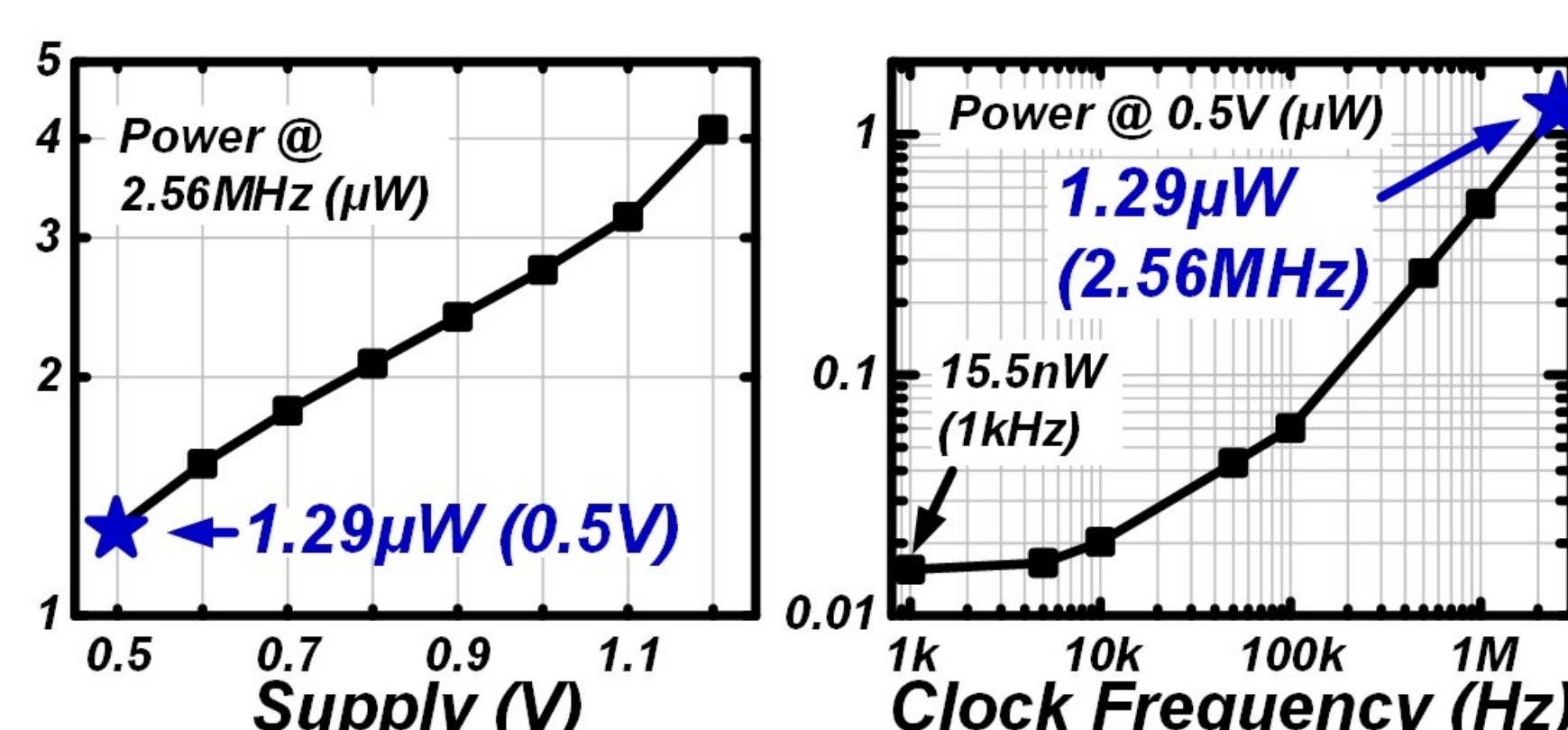
- (a) RC-OSC \Rightarrow High-Power due to the analog OTA
(b) LUT-DAC \Rightarrow High-Power & Large-Area due to the increased routing wires & registers
(c) LUT-ΔΣ-DAC \Rightarrow Reduced wires & registers, thus low-power & small-area



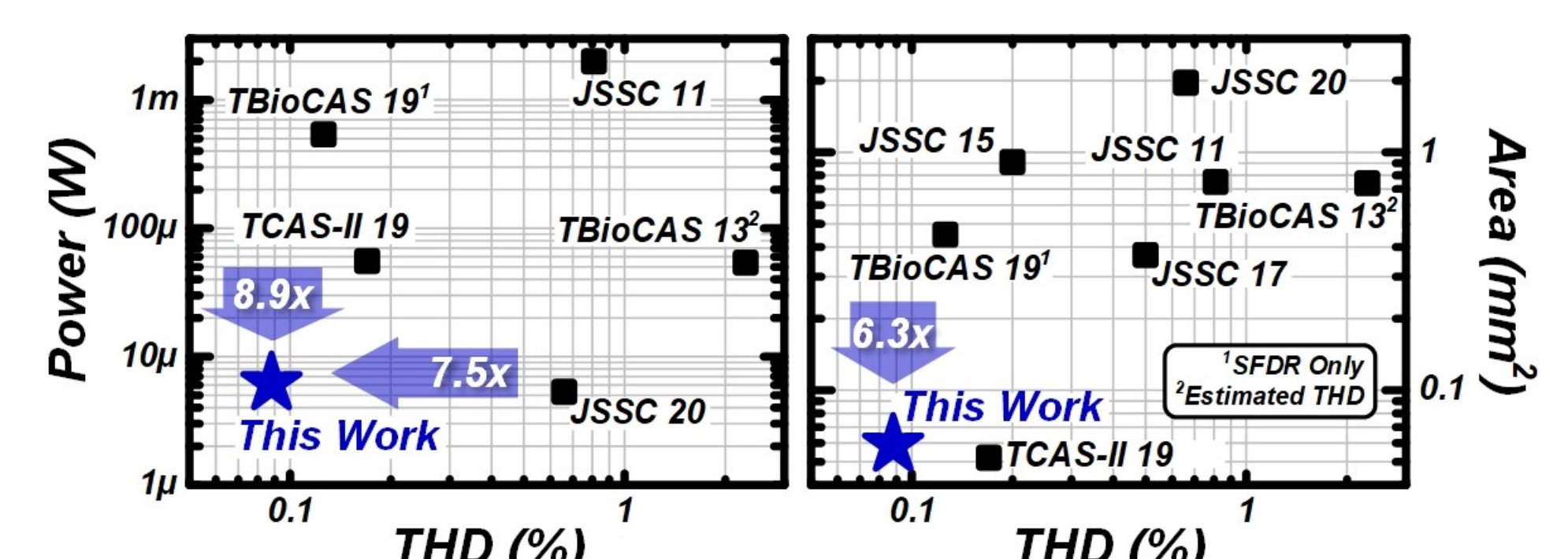
Sampling & Quantization Method of Sinewave Generation
Oversampling & Fine Quantization \Rightarrow Reduced spur levels
0.5V Near-Threshold Operation \Rightarrow Low-power consumption



Chip Photograph



Measured Chip Performances
(Power Measurement: Digital Block)



Comparison of Chip Performance

This Work is Presented in
VLSI Symposium 2020