A Process-Scalable RF Transmitter Using 90nm and 65nm Si CMOS
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**Background**

- Process-Scalable RF circuits are required for next generation systems
- Purpose is the development of the RF transmitter with the scalability

**Measurement Results**

- Power supply voltage: 1.2V (both 90nm and 65nm)
- One-tone baseband signal: 24kHz, 640mVrms

**Design of TX**

- The proposed RF transmitter is based on inverter topology
- The transmitter never includes un-scalable inductors
- Direct conversion architecture
- TX has linearity compensation

**Conclusion**

- The comparison between 90nm and 65nm demonstrates the improvements of the area by 33%, bandwidth by 83% and power consumption by 34%
- The proposed circuit has advantages in process-scalability similar to digital, thus it is expected to have higher performances along with the process scaling