A 77-GHz CMOS Long-range Automotive Radar Transceiver With False Alarm Reduction

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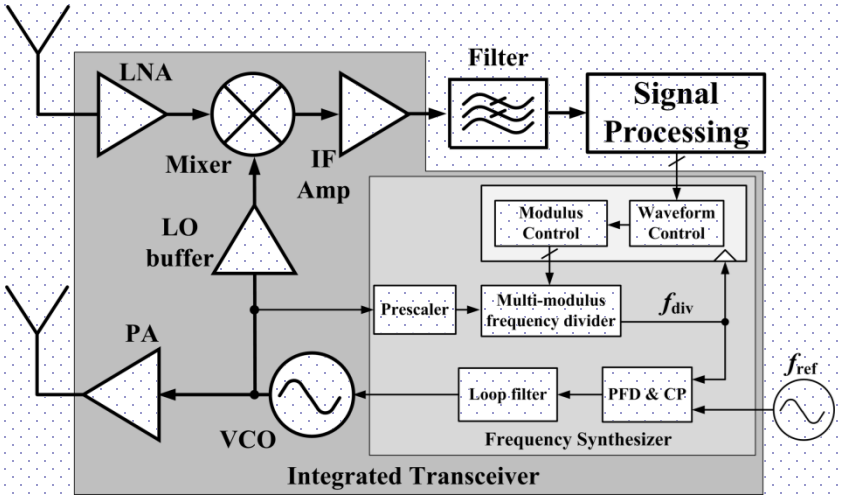
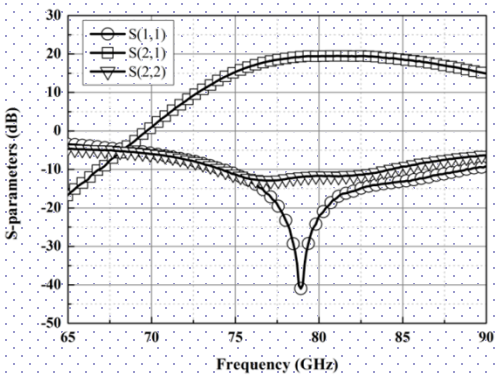
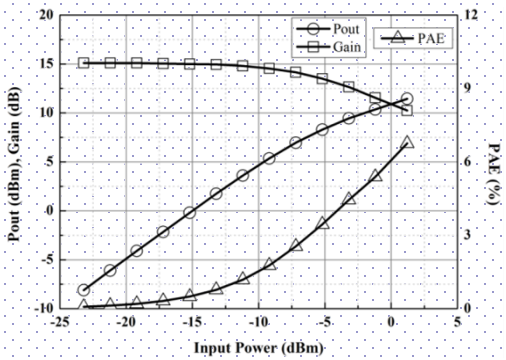
Summary



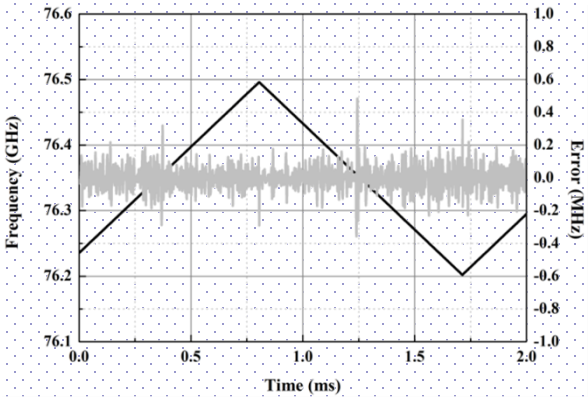
LNA : 20 mW @ 1.2 V



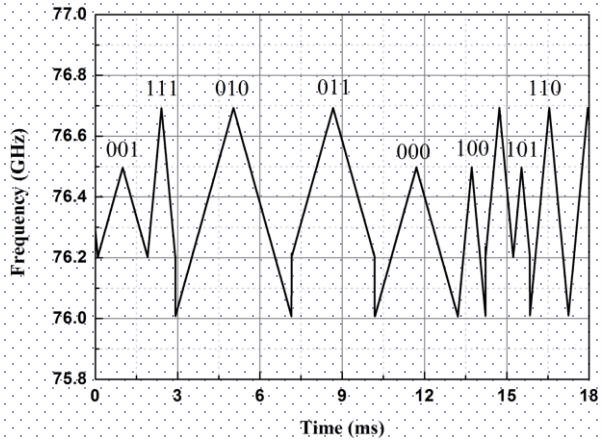
PA : 187.2 mW @ 2.4 V



Frequency Error



Chirp Waveforms



Technology	65-nm CMOS
Functionality	Fully-integrated
Frequency	76 ~ 76.7 GHz
FMCW Generation	Fractional-N
RMS Frequency Error	< 73 kHz
Receiver Gain	23 dB
Receiver NF	14.8 dB
LNA NF	5.9 dB
Transmitter Gain	15.1 dB
Transmitter Power	6.4 dBm
Power Consumption	275 mW
PN @ 1-MHz offset	-85.1 dBc/Hz
Area	1.03 × 0.94 mm^2