



RFIC TECHNOLOGIES

<http://www.rficdesign.com>

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Design of Low noise amplifier

Noise figure below 0.6dB

Variable gain both for DCS and PCS band

Maximum power 15mA for DCS and 20mA for PCS band

Frequency 1700-2000 MHz

Simulation-results-LNA for 1800 MHz condition TT 25 degree centigrade

TSMC 90 nm process

<i>LNA 0 dcs 1 pcs band</i>	<i>LNA1800G <2:0> G2,G1,G0</i>	<i>1 stage(dB)</i>	<i>2stage(dB)</i>	<i>S11 dB</i>	<i>NF (dB)</i>	<i>DCPower (mA)</i>
0	0,0,0	28.29	43.13	-1.288	0.57	15
0	0,0,1	13.13	1.946	-1.082	6.77	2
0	0,1,0	13.12	219.4m	-1.082	6.66	2
0	0,1,1	13.13	-827.6m	-1.082	6.56	2
0	1,0,0	28.35	42.47	-1.276	0.58	15
0	1,0,1	28.46	41.36	-1.254	0.58	15
0	1,1,0	28.54	40.34	-1.236	0.59	15
0	1,1,1	-3.54	-14.74	-10.41	22.4	4
1	0,0,0	28.19	43.93	-1.31	0.57	20
1	0,0,1	13.13	1.946	-1.082	6.77	2
1	0,1,0	13.12	219.4m	-1.082	6.66	2
1	0,1,1	13.13	-827.6m	-1.082	6.56	2
1	1,0,0	28.26	43.27	-1.296	0.57	20
1	1,0,1	28.38	42.18	-1.272	0.58	20
1	1,1,0	28.47	41.18	-1.253	0.59	20

Gain Flatness: ~0.35dB with all PVT criteria

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