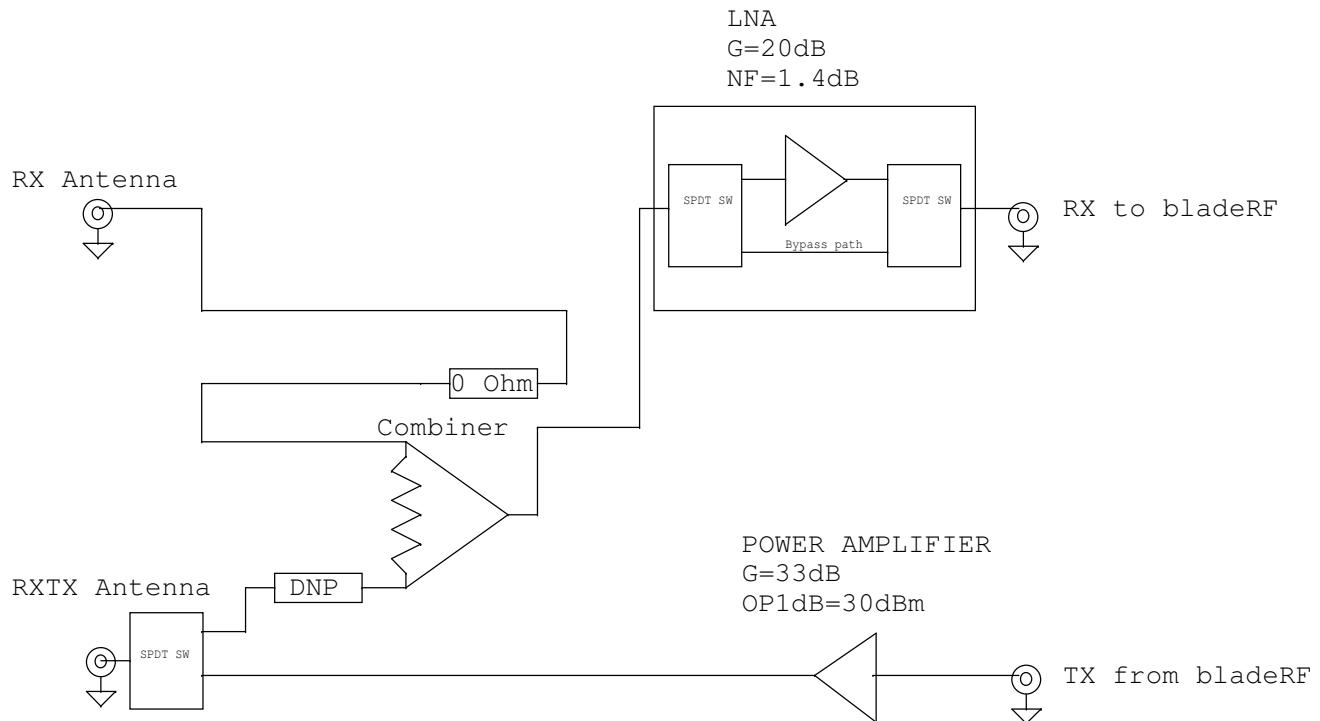


XB300 - AMPLIFIER - BLOCK DIAGRAM



In case the bladeRF is transmitting at +4dBm the bypass path should be engaged to protect the RF frontend. The maximum RF input of the bladeRF is +23dBm.

The TX PA has a gain of 30dB, the LNA has a gain of 20dB, the RF switch has an isolation of 38dB, and the LNA has 7dB of loss in bypass mode.

The on-board TX to RX power headroom then becomes:

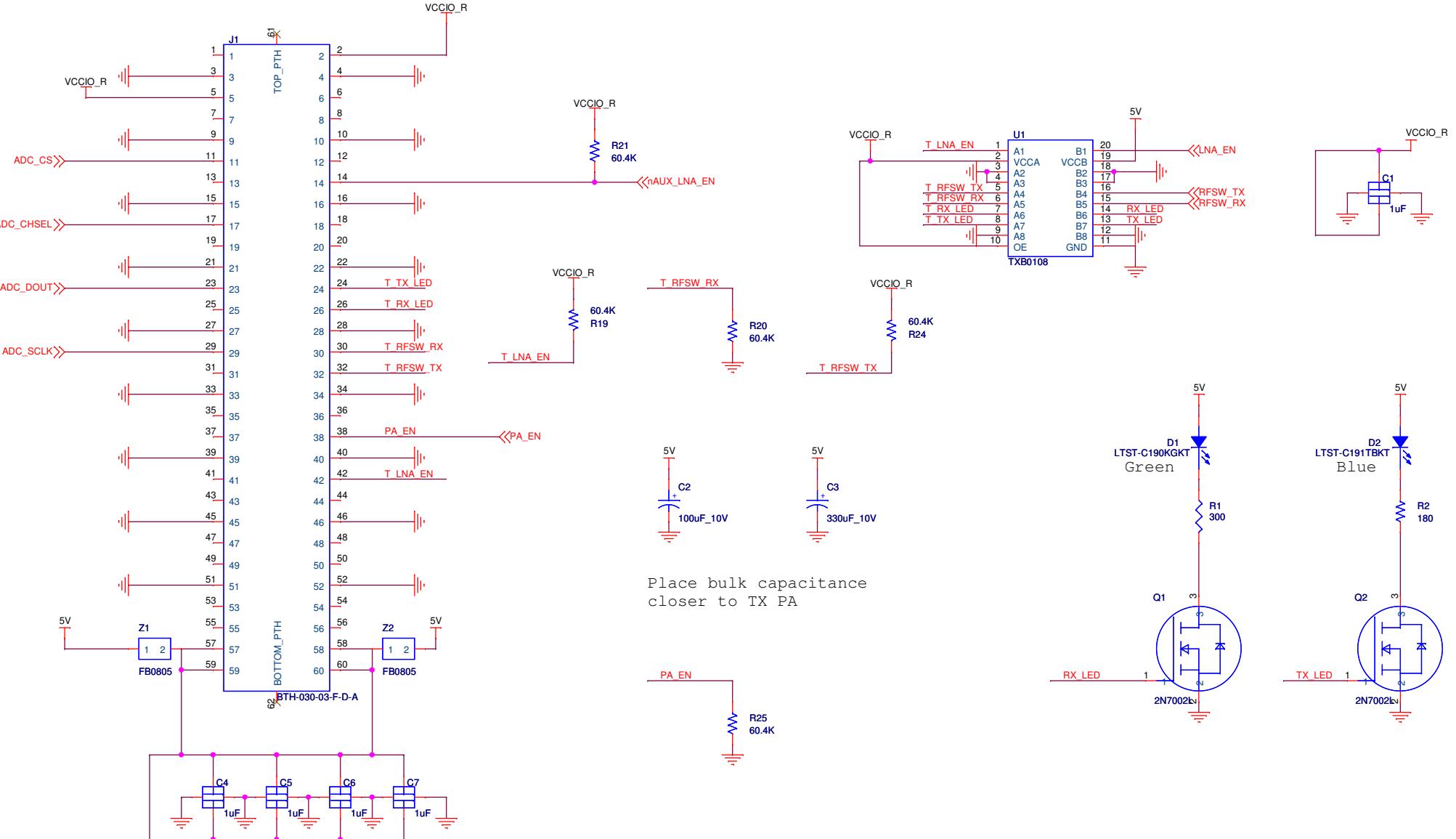
$$+23\text{dBm} - (+4\text{dBm} + 30\text{dB} - 38\text{dB} - 7\text{dB}) = 34\text{dB}$$

Assuming a free space loss of 17dB at 2.4GHz at a distance of 6 inches and a TX output of +30dBm. The antenna TX to RF headroom becomes:

$$+23\text{dBm} - (30\text{dBm} - 17\text{dB} - 7\text{dB}) = 17\text{dB}$$

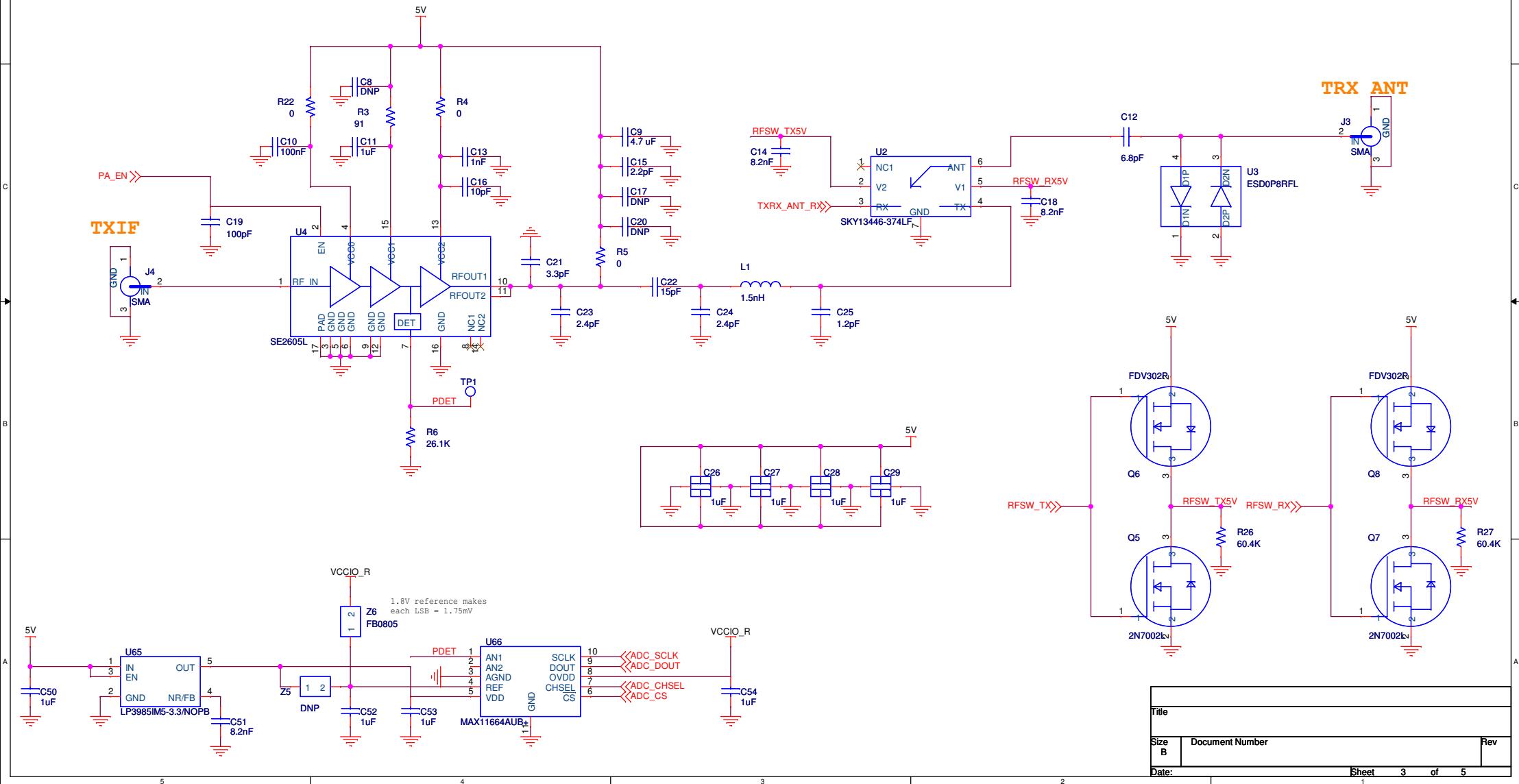
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Date:	Rev

MAIN IO CONNECTOR



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Size B	Document Number
Date:	Rev

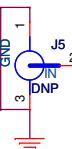
POWER AMPLIFIER



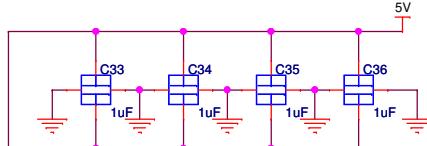
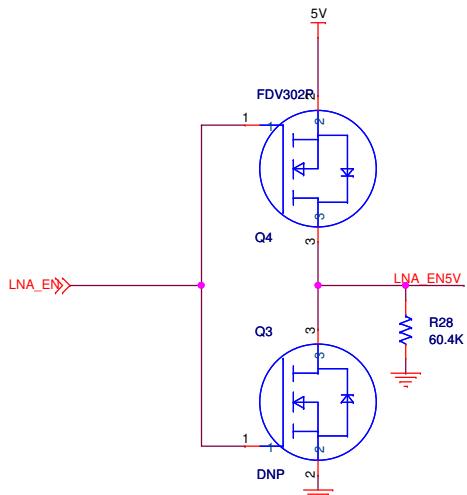
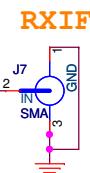
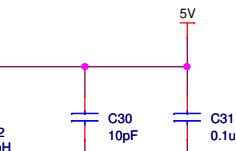
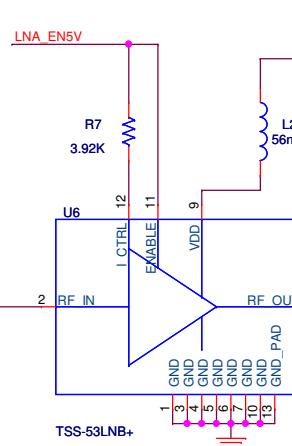
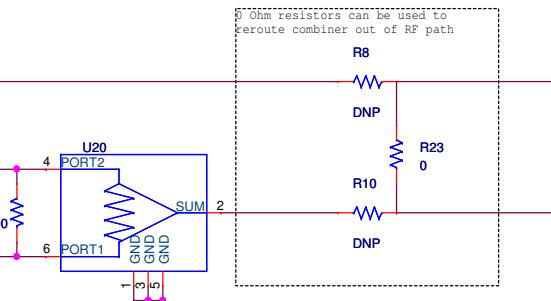
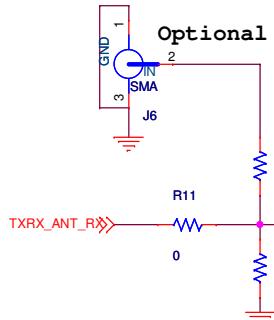
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LOW NOISE AMPLIFIER

RX ANT

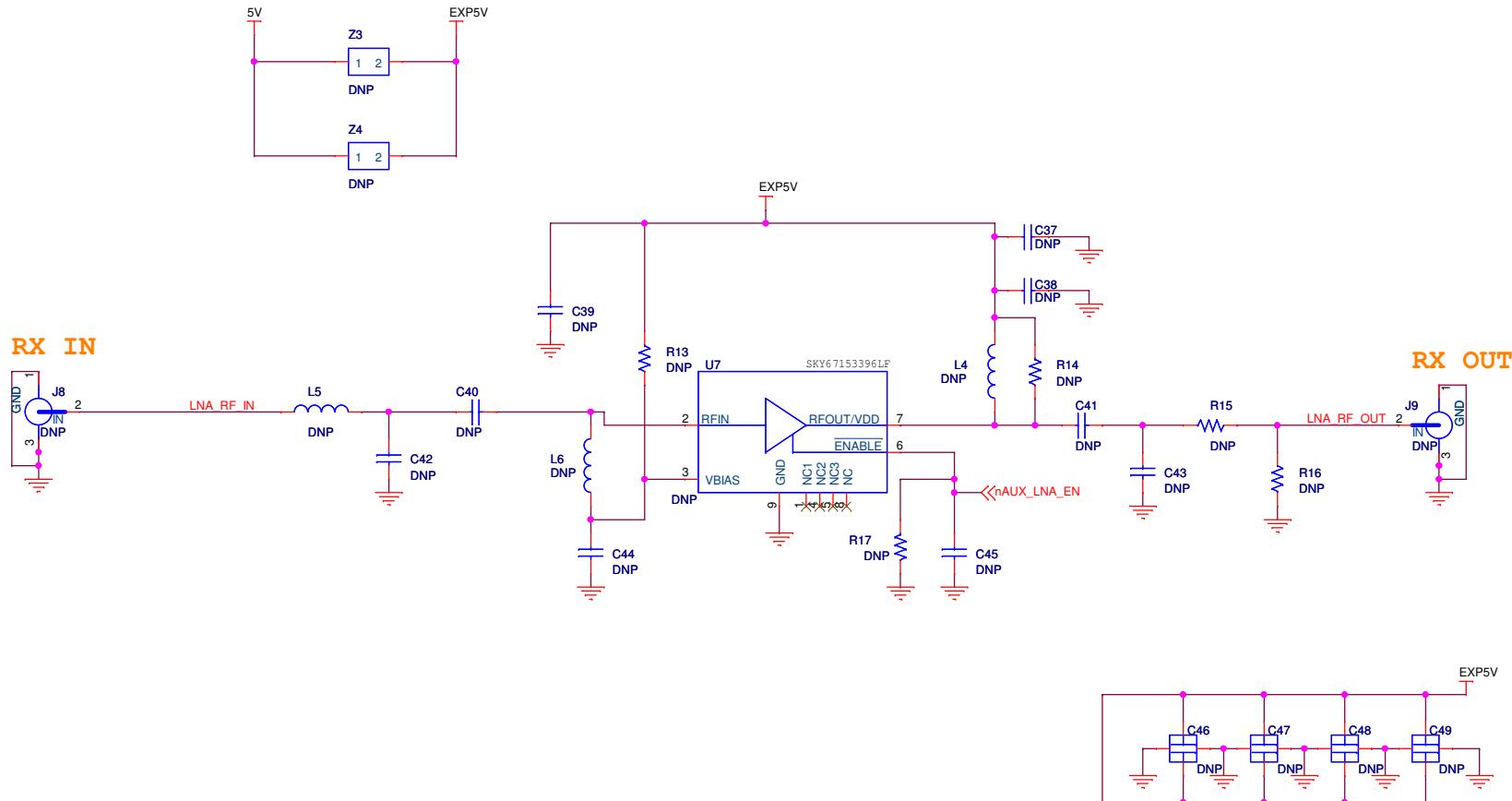


RX ANT2



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OPTIONAL ULTRA LOW NOISE AMPLIFIER



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Size B	Document Number
Date:	Rev