Abstract: Presented is a power management unit that props up multiple rails in unison while using only 1 inductor. The PMU shown can use a lithium ion battery as an input supply (min 3V) and creates high voltage positive and negative low noise outputs. It consists of single inductor dual output DCDC converter combined with positive and negative LDOs. Switching noise coupling to the outputs is suppressed by a state of the art low noise LDO with very good supply rejection and extremely fast response to sharp transient loading events. The proposed architecture can also be used in applications where DCDC converter switching can contaminate the integrity of the signal being processed. The unit proposed is especially useful in mobile communication solutions where the existence of low noise signal chain applications is essential to maintain very high SNR. Proposed architecture is in a production IC, having sold millions of units to date.

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