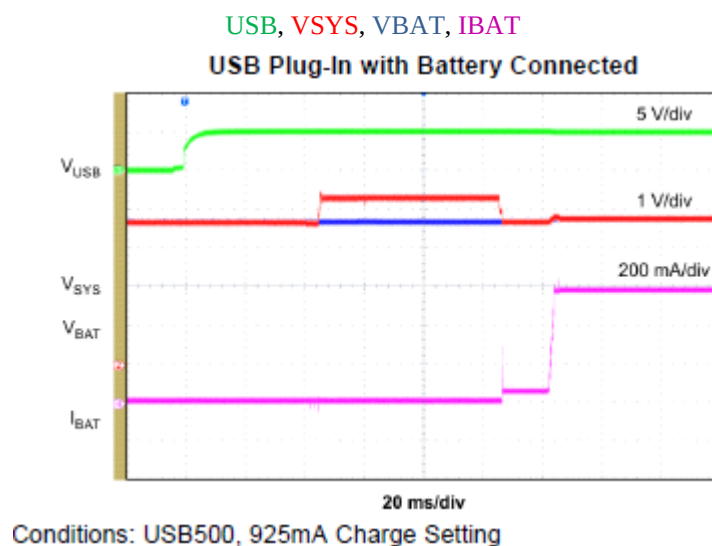


NOTE: This reference design was derived from the bq24160EVM-721, orderable at <http://www.ti.com/tool/bq24160evm-721> . Test conditions were dynamically set using the I2C interface.

1 Description

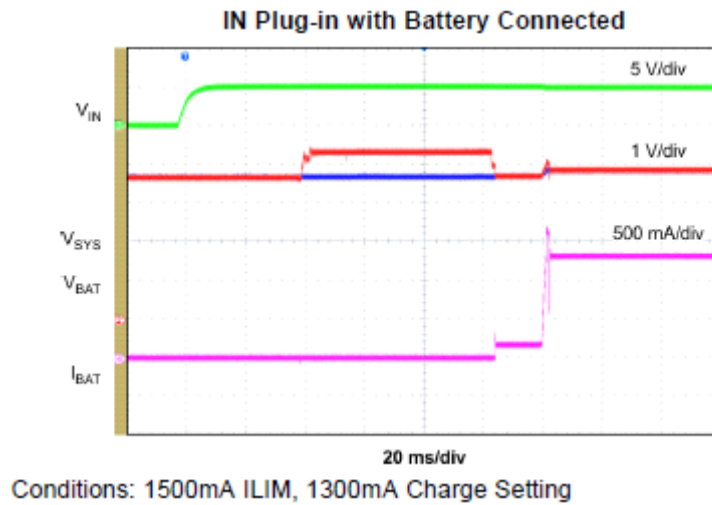
PR1070 configures the bq24160 battery charger to provide a system rail of at least 3.7V while charging a single LiIon battery from either a USB supply (4.2V to 6V) or a wall adapter (4.2V- 10V). Using I2C communication, the charge voltage can be set up to 4.44V, the charge current can be set up to 2.5A and the input current limit for each can be set up to 1.5A for the USB input or 2.5A for the adapter input. During adapter detection, the bq24160 uses its D+/D- inputs to determine if the port is SDP (with 100mA current limit) or CDP/DCP (with 1.5A current limit).

2 USB Plug In

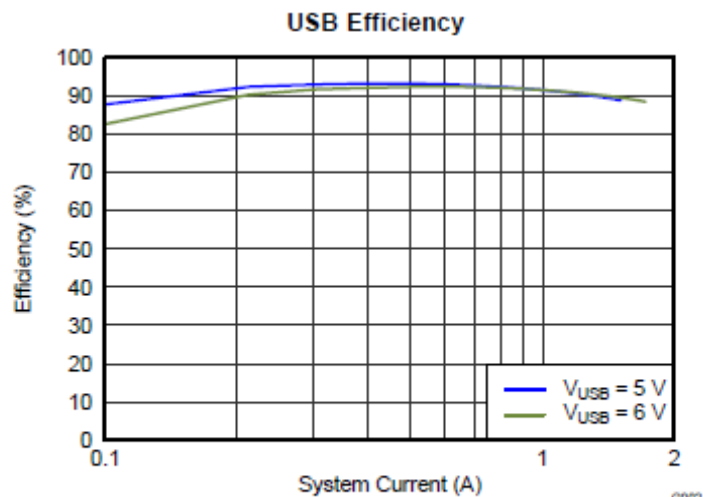


3 IN Plug-in

USB, V_{SYS}, V_{BAT}, I_{BAT}

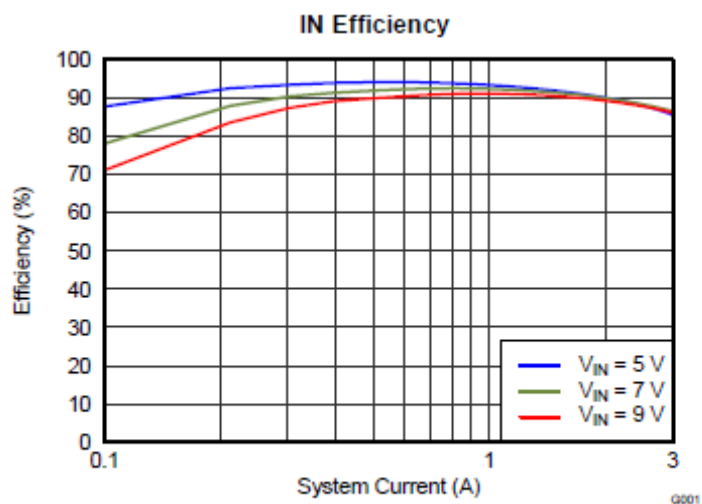


4 USB Efficiency



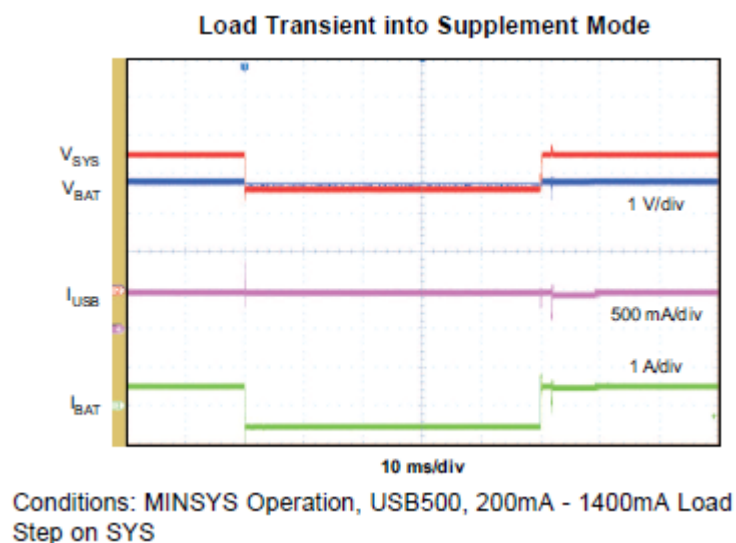
Conditions: Charge Disabled, SYS loaded, $V_{BATREG} = 3.6\text{V}$,
USB1500 ILIM

5 IN Efficiency

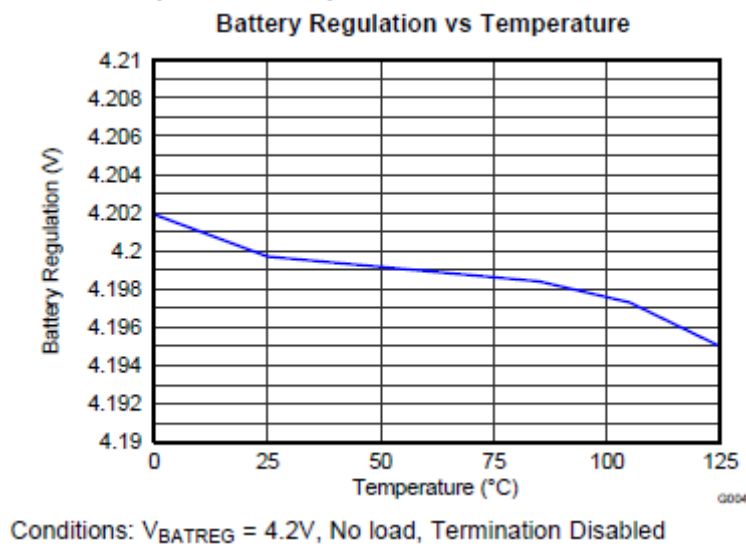


Conditions: Charge Disabled, SYS loaded, $V_{BATREG} = 3.6\text{V}$, IN2500
ILIM

6 Load Transient into Supplement Mode



7 Battery Voltage Regulation



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