



## BigSound™ Model 96/97 6 Volt Gel Cell Battery Replacement Options

While the 6V gel cells are no longer produced in that size there are options available. We make a super capacitor array for the Model 97 board. There are two NiMH battery options available from Pololu, a company specializing in robotics for the enthusiast/hobbyist, that will work with the Model 97 and its charging circuit, one of these will also work with the Model 96.

### Battery Options

The first option is a 6V 350mAh pack from Pololu which will work with either the Model 96 or Model 97 systems. It can be found at: <https://www.pololu.com/product/2243>.

The second option is a 7.2V 350mAh Pololu pack which requires the '9V Jumper' be placed on Model 97 board. This pack is shorter and narrower but slightly deeper than the original gel cell, it is the size of 2 of the current PB17 battery packs (3.6V NiMH) together. It can be found at: <https://www.pololu.com/product/2245>.

Neither of the Pololu battery packs have the same connector that was on the original gel cell battery. Their connector can be removed and the bare leads inserted into the appropriate battery screw terminals of the sound board.

### Super Capacitor Option

The SuperCap is a 7.5 Volt 10 Farad capacitor array that plugs directly into the existing battery pigtail of the Model 97 board and provides a power buffer similar to a small battery. The SuperCap provides enough power to complete the shutdown sequence without issue and suffers no degradation while discharged; long term storage while discharged will not reduce the SuperCap's ability to hold a charge.

The SuperCap reaches full capacity when sound board voltage reaches about 7.2V as it is charged by the boards battery charging circuit. Once the charging circuit activates the SuperCap effectively charges near instantly.

No difference between the SuperCap and a battery pack is noticeable if the locomotive runs above the charging threshold at least half the time and does not dip below the charging voltage for more than one minute continuously. Sound volume will decrease as the capacitor discharges just the same as it does as a battery pack discharges.