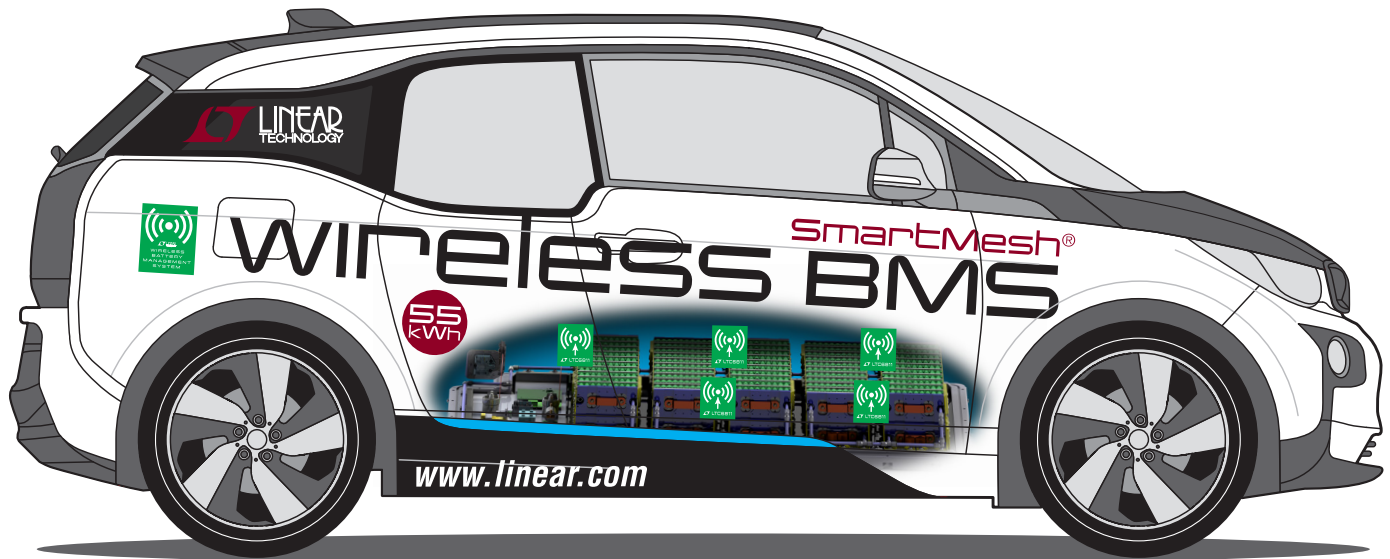


# Wireless BMS Concept Car

## Eliminating Communication Wiring in High Voltage BMS

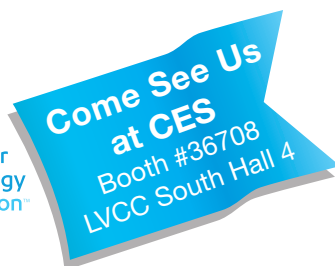


*Safer • Smarter • Greener • Cheaper*

**Linear Technology's Wireless BMS Concept Car**, built in collaboration with LION Smart and BMW, combines Linear's advanced high voltage battery monitoring ICs with its SmartMesh® high reliability wireless mesh systems. Using multiple redundant communication paths, SmartMesh ensures that the battery monitor data is reliably transmitted to the BMS microprocessor.

This significant breakthrough in BMS addresses the persistent reliability issues associated with automotive wiring harnesses and connectors in electric and hybrid/electric vehicles and simplifies its design and manufacture. The Smartmesh wireless network enables flexible placement of battery modules and improves battery state of charge and state of health calculations. Additional data can be gathered from sensors installed in locations previously unsuitable for a wiring harness and Smartmesh provides time-correlate measurements from each node which allows for more precise data collection.

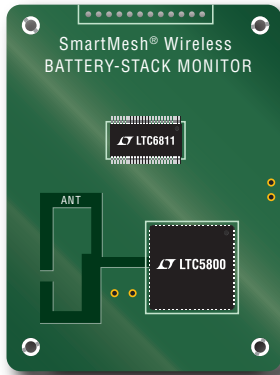
**A reference design to allow customers to demonstrate this concept, including the LTC6811 and LTC5800, will be available in the first half of 2017.**



[www.linear.com](http://www.linear.com)

# Wireless BMS Architecture

## LTC6811 High Voltage Battery Stack Monitor + SmartMesh®



The LTC6811 is a complete battery measuring device for hybrid/electric vehicles that can measure up to 12 series-connected battery cell voltages with better than 0.04% accuracy. The Wireless BMS Concept Car combines the LTC6811 with the LTC5800 from Linear's SmartMesh wireless mesh networking product line. Field-proven in Industrial Internet of Things (IoT) applications, SmartMesh embedded wireless networks deliver >99.999% reliable connectivity in harsh RF environments by employing path and frequency diversity. The combination of these products, as demonstrated in the Wireless BMS Concept Car, enables a more reliable wireless battery management system for the next generation of electric vehicles.

### LTC6811 Features:

- Measures 12 Battery Cells in Series
- Total Measurement Error: 1.2mV Max
- Built-in Programmable 3rd Order Noise Filter
- Passive Cell Balancing with Programmable Timer
- Engineered for ISO 26262 Compliant Systems

### SmartMesh Features:

- >99.999% Reliability
- End-to-End Security and Data Encryption
- Precise Time Synchronization
- Self-Configuring and Self-Healing Bidirectional Network

