

Electromagnetic Compatibility Testing in an All-Electric Vehicle

Lennart E. Long, Stephen W. Sauter, and Charles R. Edelson

– LenLong and Associates, Inc., Waltham, MA

E-Mail: l.long1@comcast.net

Abstract

Background:

Electromagnetic compatibility testing is important to determine if there are any unintended emissions that could pose a threat to the operation of the vehicle subsystems or interfere with external non-vehicle systems or wayside neighbors.

Methods:

Conductive and radiated testing were performed in accordance with UMTA recommended test practices (the only testing practices that are written for moving vehicles) to determine electromagnetic interference, susceptibility and compatibility. Conductive or radiated emissions may be caused by time varying currents, generated by any of the test vehicle subsystems.

Results:

There must be no unintended emissions identified that would pose a threat to the operation of vehicle subsystems, external non-vehicle systems or wayside neighbors. If these emissions exist, a costly system reengineering could result.