



OnStar® Volume Level Measurement Procedure

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. The purpose of this document is to describe the measurement procedure of the OnStar® volume levels.

1.2 Applicability. This test procedure is applicable to vehicles with the OnStar® system.

1.3 Remarks. The OnStar® Minimum Volume Level is the volume level that the OnStar® system returns to at the next OnStar® button press, if it is turned down below the minimum volume set point.

The OnStar® Maximum Volume Level is the maximum volume attained by increasing the radio volume to its highest setting during an active OnStar® session.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- CG2618, OnStar® Volume Level Measurement Data Sheet. The supplier shall work with the GM Design Responsible Engineer to comprehend this requirement.

3 Resources

3.1 Facilities. The test can be performed inside, outside, or in a quiet room; however, the ambient noise level must be < 50 dB(A).

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Handheld Type 1 Integrating Sound Level Meter.

3.2.2 Test vehicle with OnStar® system.

3.2.3 Production level audio system.

3.2.4 Radio calibration tool.

3.2.5 Programming tool (e.g., Tech II, Vehicle Spy (V-SPY)).

3.3 Test Vehicle/Test Piece. The vehicle must be production-intent, including, but not limited to, the following items:

- OnStar® hardware (main telematics unit and phone if separate). This includes both production-release software and hardware.

- Audio system.
- All cabling including its positioning, type, and length.
- Vehicle interior components and materials.

3.4 Test Time.

Calendar time:	1 day
Test hours:	1 h to 3 h
Calibration hours:	1 h to 2 h
Coordination hours:	4 h to 6 h

3.5 Test Required Information. Prior to testing the applicable OnStar® system, the vehicle component information shall be entered into CG2618, OnStar® Volume Level Measurement Data Sheet. The supplier shall work with the GM Design Responsible Engineer to comprehend this requirement.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation.

- 4.1.1** All windows and doors must be completely shut.
- 4.1.2** All necessary equipment must be secured so that no squeaks or rattles are audible.
- 4.1.3** All unnecessary equipment, personnel, and items must be removed from the car.
- 4.1.4** The sunroof, if present, must be closed, including the carpet or pullover.
- 4.1.5** The Telematics Control Unit (TCU) shall be configured properly for the vehicle under test.

4.2 Conditions.

4.2.1 Environmental Conditions. The test shall be performed where ambient noise level is < 50 dB(A). Outside noise due to weather and other sources should be minimal.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.2.3 Sound Level Measurement Conditions. An attempt should be made to keep conditions consistent from one OnStar® Volume Level Measurement to the next.

4.2.3.1 Prompt Volume Measurement. The OnStar® Volume Measurements will use the Equivalent Continuous Noise Level (Leq) measured over the length of the OnStar® Help Menu prompts.

The Sound Level Meter settings will be:

- Parameter – Leq
- Frequency Weighting – A-weighted
- Range – Thirty (30) dB to 110 dB

The test operator will measure the OnStar® Help Menu while the "Hands Free" commands are played. The test operator shall start recording just after the OnStar® Help Menu starts and measure for the length of the prompt. Care shall be taken in starting the recording as to not record the operator's voice.

4.2.3.2 Seat Position. The driver's seat will be positioned fully rearward and fully downward with the seat back angle set to a comfortable forward facing position during the sound pressure measurements.

4.2.3.3 Ear Reference Point (ERP). The ERP for the measurement of sound levels in this procedure, is a point 2.54 cm (1 in) from the driver's right ear in a left-hand drive vehicle and 2.54 cm (1 in) from the driver's left ear in a right-hand drive vehicle. The sound pressure meter will be held in a vertical orientation with the meter tip at the ERP.

4.2.3.4 Ignition State. The vehicle will be in a Key On Engine Off state during all measurements.

4.3 Instructions.

4.3.1 Ambient Volume Sound Level Measurement.

4.3.1.1 Turn the radio, HVAC, and any other sound producing systems off.