GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW18015

GEM ECU OTA Component Test 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. To identify the Electronic Control Unit (ECU) component level test procedures to be performed to verify GB9840 Over the Air (OTA) Remote Reflash (RR) capability. The test procedures that verify these requirements are contained in CG5385, CG5386, and CG5387.

1.2 Applicability. Vehicles equipped with OTA RR capability.

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.

- CG5385 GEM OTA RR Programming Reliability/Success Validation Plan
- CG5386 GEM GB9840 On-Board Programming Requirements Test Procedure Full
- CG5387 GEM GB9840 On-Board Programming Requirements Test Procedure Pre-requisite
- GB9840 On-Board Programming Requirements Deployment Specification

3 Resources

3.1 Facilities. An electrical test laboratory with a subsystem or system test bench or a vehicle with RR capability.

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. A serial data monitoring tool and test computer with the supporting software and a network connection to the RR test tool servers.

3.3 Test Vehicle/Test Piece. A test bench or vehicle with latest (production intent) RR capable modules.

3.4 Test Time. The individual CGs (CG5385, CG5386, and CG5387) are comprehensive, i.e., contain instructions to test all RR features/functions. Test time is dependent on program content.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. One (1) Infotainment Subsystem Engineer is required to perform the test. Knowledge of General Motors Local Area Network (GMLAN) is required. The test engineer must be able to transmit functional and diagnostic messages with the test tool and record and analyze GMLAN serial data communications. Additionally, the knowledge of Ethernet data monitoring is required.

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4 Procedure

4.1 Preparation. Verify that the correct hardware and software levels are being used with the correct calibration.

4.2 Conditions. As found in the individual CGs (CG5385, CG5386, and CG5387).

4.2.1 Environmental Conditions.

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.

4.3 Instructions. Follow the instructions found in the individual CGs (CG5385, CG5386, and CG5387). The individual CGs are comprehensive, some portions may not be applicable to the configuration and/or calibration being tested.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results. The test engineer is to perform the test steps, read the action for each step, then compare the actual results to the expected results, then determine if the subsystem does/does not meet the requirements. Some test steps may not be applicable to the configuration and/or calibration being tested.

5.3 Test Documentation. For each requirement tested, the test engineer is to document "Pass", Not applicable ("N/A") or "Failed" in the results column of the test procedures.

All failures or unusual observations are to be documented in the Electrical and Software Issue Management System (ESIMS), or in the Problem Resolution Tracking System (PRTS). Complete bus log files are to be collected and included with the ESIMS, PRTS. Contact the GM Release Engineer for details regarding which system to document failures or unusual observations.

6 Safety

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

ECU	Electronic Control Units
ESIMS	Electrical and Software Issue Management System
GMLAN	General Motors Local Area Network
N/A	Not applicable
OTA	Over the Air
PRTS	Problem Resolution Tracking System
RR	Remote Reflash

8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Test to GMW18015

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