SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 214S
SIDE IMPACT PROTECTION (STATIC)

NISSAN MOTOR CO., LTD.
2004 NISSAN MAXIMA, PASSENGER CAR
NHTSA NO. C45207

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

SEPTEMBER 9, 2004
FINAL REPORT
PREPARED FOR
U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NV5-220)
WASHINGTON, D.C. 20590
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Prepared by: [Signature]

Approved by: [Signature]

Approval Date: 9/9/05

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Final Report of FMVSS 214 Compliance Testing of 2004 NISSAN MAXIMA, PASSENGER CAR

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September 9, 2004

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GTL

### 7. Author(s)
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Debbie Messick, Project Manager

### 8. Performing Organ. Rep#
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### 9. Performing Organization Name and Address
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1623 Leedstown Road
Colonial Beach, Va 22443

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August 30, 2004

### 14. Sponsoring Agency Code
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### 16. Abstract
Compliance tests were conducted on the subject 2004 Nissan Maxima Passenger Car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214S-05 for the determination of FMVSS 214 compliance.

Test failures identified were as follows:

NONE

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<td>5.21</td>
<td>Rear Vehicle Tie Down - Test 2</td>
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<td>Front Vehicle Tie Down - Test 2</td>
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<td>5.23</td>
<td>Inclinometer Pre-Test 2</td>
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<tr>
<td>5.24</td>
<td>Dial Indicator Pre-Test 2</td>
</tr>
<tr>
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<td>Load Device against Door - Pre-Test 2</td>
</tr>
<tr>
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SECTION 1
INTRODUCTION

1.0 PURPOSE OF COMPLIANCE TEST

A 2004 Nissan Maxima 4-door passenger car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 214 testing to determine if the vehicle was in compliance with the requirements of the standard. FMVSS No. 214 establishes requirements for the side doors of a Motor Vehicle to minimize the safety hazard caused by intrusion into the passenger compartment as a result of a side impact accident.

1.1 TEST VEHICLE

The test vehicle was a 2004 Nissan Maxima 4-door passenger car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1N4BA41E94C854759

B. NHTSA No.: C45207

C. Manufacturer: NISSAN MOTOR CO., LTD.

D. Manufacture Date: 09/03

The vehicle's front and rear seating systems were removed for this test. All vehicle windows were closed and all doors were locked for this test.

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 214 testing on August 30, 2004.
SECTION 2
TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure, TP-214S-05 dated 14 September 1993 and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-214S-05, "Static – Side Impact Protection".

Each vehicle shall be able to meet the requirements of either, at the manufacturer’s option, 2.1 or 2.2 when any of its side doors that can be used for occupant egress are tested.

2.1 OPTION ONE

With any seats that may affect load upon or deflection of the side of the vehicle removed from the vehicle, each vehicle must be able to meet the requirements of 2.1.1 through 2.1.3.

2.1.1 INITIAL CRUSH RESISTANCE

The initial crush resistance shall not be less than 2,250 pounds.

2.1.2 INTERMEDIATE CRUSH RESISTANCE

The intermediate crush resistance shall not be less than 3,500 pounds.

2.1.3 PEAK CRUSH RESISTANCE

The peak crush resistance shall not be less than two times the curb weight of the vehicle or 7,000 pounds, whichever is less.

2.2 OPTION TWO

With seats installed in the vehicle, and located in any horizontal or vertical position to which they can be adjusted and at any seat back angle to which they can be adjusted, each vehicle must be able to meet the requirements of 2.2.1 through 2.2.3.

2.2.1 INITIAL CRUSH RESISTANCE

The initial crush resistance shall not be less than 2,250 pounds.

2.2.2 INTERMEDIATE CRUSH RESISTANCE

The intermediate crush resistance shall not be less than 4,375 pounds.
2.2.3 PEAK CRUSH RESISTANCE

The peak crush resistance shall not be less than three and one half times the curb weight of the vehicle or 12,000 pounds, whichever is less.
SECTION 3
COMPLIANCE TEST DATA
DATA SHEET 1
TEST VEHICLE RECEIVING-INSPECTION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 NISSAN MAXIMA PASSENGER CAR
VEH. NHTSA NO.: C45207; VIN: 1N4BA41E94C854759
VEH. BUILD DATE: 09/03; TEST DATE: AUGUST 30, 2004
TEST LABORATORY: GENERAL TESTING LABS
OBSERVERS: G. FARRAND, J. LATANE

A. First compliance test by laboratory for this vehicle is the static FMVSS 214 test.

Yes X No (Go to item 2)

X (1) Label test vehicle with NHTSA Number

X (2) Verify all options on the "window sticker" are present on the vehicle

X (3) Verify tires and wheel rims are new and the same as listed

X (4) Verify there are no dents or other interior or exterior flaws

X (5) Verify the glove box contains an owner's manual, warranty document, consumer information, and extra keys

X (6) Verify the vehicle is equipped with the proper fuel filler cap

X (7) If the vehicle has been delivered from the dealer, verify the vehicle has been properly prepared and is in running condition

B. Verify seat adjusters are working

Yes No

X Yes

C. Verify there is a seat belt at each seating position

Yes No

X Yes

D. Without disturbing the integrity of each seat belt and anchorage, verify that each seat belt is attached to the anchorage. For seat belts that are attached to the seat, also verify the seats are attached to the seat anchors and the seat anchors are attached to the vehicle.

Yes No

X Yes

E. Curb Weight of Vehicle: 3482 LBS.

F. COMMENTS: (Explain any problems here)

RECORDED BY: DATE: 08/27/04

APPROVED BY:
DATA SHEET 2
PRETEST PREPARATION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 NISSAN MAXIMA PASSENGER CAR
VEH. NHTSA NO.: C45207; VIN: 1N4BA41E94C854759
VEH. BUILD DATE: 09/03; TEST DATE: AUGUST 30, 2004
TEST LABORATORY: GENERAL TESTING LABS
OBSERVERS: G. FARRAND, J. LATANE

Prior to testing the following will be accomplished:

<table>
<thead>
<tr>
<th>TEST</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B.</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>E.</td>
<td>LF</td>
<td>RR</td>
</tr>
<tr>
<td>F.</td>
<td>44.4</td>
<td>30.6</td>
</tr>
<tr>
<td>G.</td>
<td>5&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>H.</td>
<td>22.2</td>
<td>15.3</td>
</tr>
<tr>
<td>I.</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>J.</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

RECORDED BY: [Signature]
DATE: 08/30/04
APPROVED BY: [Signature]
DATA SHEET 3
STATIC LOAD TEST - BACK-UP SYSTEM DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2004 NISSAN MAXIMA PASSENGER CAR
VEH. NHTSA NO.: C45207; VIN: 1N4BA41E94C854759
VEH. BUILD DATE: 09/03; TEST DATE: AUGUST 30, 2004
TEST LABORATORY: GENERAL TESTING LABS
OBSERVERS: G. FARRAND, J. LATANE

RESULTS: Plots of load versus displacement and time versus displacement obtained from the back-up data (attach plots to data sheet) showed that:

TEST #1 - GTL #5242 (LEFT FRONT DOOR)

A. The initial crush resistance was 3139 lbs.

B. The intermediate crush resistance was 5039 lbs.

C. The peak crush resistance was 8647 lbs at 12,661 inches

D. The rate of loading was 2"/sec

The dial indicator and the inclinometer showed the following deflections.

<table>
<thead>
<tr>
<th>LOADING DEVICE TRAVEL</th>
<th>DIAL INDICATOR</th>
<th>INCLINOMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 inches</td>
<td>0.0000</td>
<td>0</td>
</tr>
<tr>
<td>2 inches</td>
<td>0.0289</td>
<td>0</td>
</tr>
<tr>
<td>4 inches</td>
<td>0.0785</td>
<td>0</td>
</tr>
<tr>
<td>6 inches</td>
<td>0.1450</td>
<td>0</td>
</tr>
<tr>
<td>12 inches</td>
<td>0.4260</td>
<td>0</td>
</tr>
<tr>
<td>12.661 inches (full travel)</td>
<td>0.5186</td>
<td>0</td>
</tr>
</tbody>
</table>

TEST #2 - GTL #5243 (RIGHT REAR DOOR)

A. The initial crush resistance was 3426 lbs.

B. The intermediate crush resistance was 5738 lbs.

C. The peak crush resistance was 11,108 lbs at 12,467 inches

D. The rate of loading was 2"/sec
DATA SHEET 3 CONTINUED
STATIC LOAD TEST - BACK-UP SYSTEM DATA

The dial indicator and the inclinometer showed the following deflections.

<table>
<thead>
<tr>
<th>LOADING DEVICE TRAVEL</th>
<th>DIAL INDICATOR</th>
<th>INCLINOMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 inches</td>
<td>0.0000</td>
<td>0</td>
</tr>
<tr>
<td>2 inches</td>
<td>0.0000</td>
<td>0</td>
</tr>
<tr>
<td>4 inches</td>
<td>0.0147</td>
<td>0</td>
</tr>
<tr>
<td>6 inches</td>
<td>0.0235</td>
<td>0</td>
</tr>
<tr>
<td>12 inches</td>
<td>0.1835</td>
<td>0</td>
</tr>
<tr>
<td>12.467 Inches (full travel)</td>
<td>0.1945</td>
<td>0</td>
</tr>
</tbody>
</table>

RECORDED BY: [Signature]  DATE: 08/30/04
APPROVED BY: [Signature]
VEH. MOD YR/MAKE/MODEL/BODY: 2004 NISSAN MAXIMA PASSENGER CAR
VEH. NHTSA NO.: C45207; VIN: 1N4BA41E94C854759
VEH. BUILD DATE: 09/03; TEST DATE: AUGUST 30, 2004
TEST LABORATORY: GENERAL TESTING LABS
OBSERVERS: G. FARRAND, J. LATANE

Data from the primary data systems will be analyzed and the plots attached to the data sheet.

RESULTS - The load versus displacement plot showed that --

**TEST #1** - GTL #5242 (LEFT FRONT DOOR)

A. The initial crush resistance was 3139 lbs.
B. The intermediate crush resistance was 5039 lbs.
C. The peak crush resistance was 8647 lbs at 12.661 inches

The time versus displacement plot showed that --

The rate of loading was .2"/sec

**TEST #2** - GTL #5243 (RIGHT REAR DOOR)

A. The initial crush resistance was 3426 lbs.
B. The intermediate crush resistance was 5738 lbs.
C. The peak crush resistance was 11,108 lbs at 12.467 inches

The time versus displacement plot showed that --

The rate of loading was .2"/sec

Comparison of the ABOVE DATA with the BACKUP DATA indicates the following --

All data was the same.

RECORDED BY: [Signature]  DATE: 08/30/04
APPROVED BY: [Signature]
## SECTION 4

### TEST EQUIPMENT LIST

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DESCRIPTION</th>
<th>MODEL/ SERIAL NO.</th>
<th>CAL. DATE</th>
<th>NEXT CAL. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPUTER</td>
<td>AT&amp;T</td>
<td>486DX266</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TEST FIXTURE</td>
<td>GTL 220</td>
<td>220</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>A/D INTERFACE</td>
<td>METRABYTE</td>
<td>DAS-16(F)</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>SCALES</td>
<td>FAIRBANKS</td>
<td>N/A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>SIGNAL CONDITIONER</td>
<td>METRABYTE</td>
<td>EXP-RES</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>LOAD CELLS</td>
<td>REVERE</td>
<td>544351A</td>
<td>11/03</td>
<td>11/04</td>
</tr>
<tr>
<td></td>
<td>REVERE</td>
<td>544551B</td>
<td>11/03</td>
<td>11/04</td>
</tr>
<tr>
<td>LINEAR POT.</td>
<td>WALDALE</td>
<td>123456A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td></td>
<td>WALDALE</td>
<td>123456B</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
<tr>
<td>INCLINOMETER</td>
<td>STARRETT</td>
<td>360/002</td>
<td>02/04</td>
<td>02/05</td>
</tr>
<tr>
<td>DIAL INDICATOR</td>
<td>MIOTO</td>
<td>0001-2</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
</tbody>
</table>
SECTION 5

PHOTOGRAPHS
2004 NISSAN MAXIMA
NHTSA NO. C45207
FMVSS NO. 214

FIGURE 5.2
LEFT SIDE VIEW OF VEHICLE PRE-TEST
MANUFACTURED BY NISSAN MOTOR CO., LTD.

DATE: 03/03  GWK: 4545 LP
GRW FR.: 2468 LB  GRW RR.: 2357 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, EMISSION AND DEPT PREVENTION STANDARDS IN EFFECT ON THE DATE OF CERTIFICATION. SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION.

VIN: 1N4BA41E94C854759  PASSENGER CAR
COLOR: TRIM: TRANS: AXLE: ENGINE

FIGURE 5.7
VEHICLE CERTIFICATION LABEL

2004 NISSAN MAXIMA
NHTSA NO. C45207
FMVSS NO. 214
<table>
<thead>
<tr>
<th>VEHICLE WEIGHT</th>
<th>650 lbs</th>
<th>SEATING CAPACITY</th>
<th>FRONT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOODS UTILE DU VÉHICULE</td>
<td>990 kg</td>
<td>KOMBI DE PLACE POUR PASSAGERS</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

RECOMMENDED COLD TIRE INFLATION PRESSURE:
PRÉSSION DE COMPLÉTAGE RECOMMANDE DES PNEUS Froids

<table>
<thead>
<tr>
<th>TIRE SIZE</th>
<th>FRONT</th>
<th>REAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>545/60R16</td>
<td>210 (52)</td>
<td>220 (52)</td>
</tr>
</tbody>
</table>

DO NOT USE IN EXCESS OF 45 MPH / 70 KM/H.
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION.
MAX 50 MPH / 80 KM/H.
NOTES ON THE PROTECTIVE COVER.

FIGURE 5.6
VEHICLE TIRE INFORMATION LABEL

2004 NISSAN MAXIMA
NHTSA NO. C45207
FMVSS NO. 214
FIGURE 5.18
DIAL INDICATOR AT MAX LOAD - TEST 1
SECTION 6

TEST DATA PLOTS
GTL 5242, NHTSA C45207.

214, Static Door Crush, Front Driver Door

Displacement in Inches

Time in Seconds
GTL 5243, NHTSA C45207.


Force in Pounds (Thousands)

Displacement in Inches

12 11 10 9 8 7 6 5 4 3 2 1 0 -1

1 2 3 4 5 6 7 8 9 10 11 12
GTL 5243, NHTSA C45207.

214, Static Door Crush, Pass.Rear Door.