

**IMPORTANT NOTICE:** Robert Bosch LLC and the manufacturers whose vehicles are accessible using the CDR System urge end users to use the latest production release of the Crash Data Retrieval system software when viewing, printing or exporting any retrieved data from within the CDR program. Using the latest version of the CDR software is the best way to ensure that retrieved data has been translated using the most current information provided by the manufacturers of the vehicles supported by this product.

## CDR File Information

|   |                                  |
|---|----------------------------------|
| User Entered VIN                                  | [REDACTED]                       |
| User  | Michelle                         |
| Case Number                                       | [REDACTED]                       |
| EDR Data Imaging Date                             | 06/06/2017                       |
| Crash Date  | 05/28/2017                       |
| Filename  | [REDACTED]                       |
| Saved on  | Tuesday, June 6 2017 at 08:09:59 |
| Imaged with CDR version                           | Crash Data Retrieval Tool 17.3   |
| Imaged with Software Licensed to (Company Name)   | Crash Data Forensics             |
| Reported with CDR version                         | Crash Data Retrieval Tool 17.3   |
| Reported with Software Licensed to (Company Name) | Crash Data Forensics             |
| EDR Device Type                                   | Airbag Control Module            |
| Event(s) recovered                                | Non-Deployment                   |

## Comments

No comments entered.

## Data Limitations

### Recorded Crash Events:

There are two types of recorded crash events for Front, Side, and Rear (FSR) Events. The first is the Non-Deployment Event. A Non-Deployment Event records data but does not deploy the air bag(s). The minimum SDM Recorded Vehicle Velocity Change, that is needed to record a Non-Deployment Event, is five MPH [8 km/h]. A Non-Deployment Event contains Pre-Crash and Crash data. The oldest Non-Deployment event can be overwritten by a Deployment Event, if all three records are full and the Non-Deployment Event is not locked. A Non-Deployment Event can be overwritten by a more recent Non-Deployment Event if all three records are full and the Non-Deployment is older than approximately 250 ignition cycles. Also, a Non-Deployment event can be recorded if one of the following occurs without the Deployment of any of the frontal air bags, side air bags, or roll bars:

- Pretensioner(s) only Deployment
- Head Rest Deployment
- Battery Cut-Off Deployment

The second type of SDM recorded crash event for FSR Events is the Deployment Event. It also contains Pre-Crash and Crash data. Deployment Events cannot be overwritten or cleared by the SDM.

Rollover Events contains Pre-Crash and Crash data. Rollover event follow the same rules as FSR Deployment events.  
The SDM can store up to three Events.

### Data:

For FSR Events, SDM Recorded Vehicle Velocity Change reflects the change in velocity that the sensing system experienced during the recorded portion of the event. SDM Recorded Vehicle Velocity Change is the change in velocity during the recording time and is not the speed the vehicle was traveling before the event, and is also not the Barrier Equivalent Velocity. For Deployment and Non-Deployment Events, the SDM will record up to 300 milliseconds of data after time zero. The SDM will also record up to 300 milliseconds of Vehicle Acceleration data after time zero.

For Rollover Events, the SDM may record Lateral Acceleration, Vertical Acceleration, and Roll Rate data, if the SDM is rollover capable. This data reflects what the sensing system experienced during the recorded portion of the event. For Rollover Deployment Events, the SDM will record up to 700 milliseconds of data before the Deployment criteria is met and 290 milliseconds after the Deployment criteria is met.

-Deployment loops may be displayed as being deployed in a Non-Deployment event record, if a Deployment event is qualified during the Non-Deployment event. That is, if two or more events are occurring at the same time and one is a Non-Deployment event and one of the others is a Deployment event, and the Deployment event is qualified while the Non-Deployment is still active, the deployed loops may be recorded in the Non-Deployment event record.

-Time between events is recorded in 10 msec intervals and is displayed in seconds for a maximum time of 655.33 seconds. The counter measures the time from the start of one event to the start of the next event if both events occur within the same ignition cycle.

-The Maximum SDM Recorded Vehicle Velocity Change may occur between the recorded 10 millisecond sample points of the SDM Recorded Vehicle Velocity Change.

-Event Recording Complete will indicate if data from the recorded event has been fully written to the SDM memory or if it has been interrupted and not fully written.

-SDM Recorded Vehicle Speed accuracy can be affected by various factors, including but not limited to the following:

- Significant changes in the tire's rolling radius
- Final drive axle ratio changes
- Wheel lockup and wheel slip
- Brake Switch Circuit Status indicates the open/closed state of the brake switch circuit.
- Pre-Crash data is recorded asynchronously. The 0.5 second Pre-crash data value (most recent recorded data point) is the data point last sampled before Time Zero. That is to say, the last data point may have been captured just before Time Zero but no more than 0.5 second before Time Zero. All subsequent Pre-crash data values are referenced from this data point.
- Pre-Crash Electronic Data Validity Check Status indicates "Data Invalid" if:
  - The SDM receives a message with an "invalid" flag from the module sending the pre-crash data
- Pre-Crash Electronic Data Validity Check Status indicates "Data Not Available" if:
  - No data is received from the module sending the pre-crash data
- For diesel powered vehicles, the data displayed as Throttle Position (%) is actually the data for the Air Inlet Flap Position. This is not the same as the throttle position for a gasoline powered engines.
- Belt Switch Circuit Status indicates the status of the seat belt switch circuit.
- The ignition cycle counter will increment when the power mode cycles from OFF/Accessory to RUN. Applying and removing of battery power to the module will not increment the ignition cycle counter.
- Ignition Cycles Since DTCs Were Last Cleared can record a maximum value of 253 cycles and can only be reset by a scan tool.
- Dynamic Deployment Event Counter tracks the number of Deployment events that have occurred during the SDM's lifetime.
- Dynamic Event Counter tracks the number of qualified events (either Deployments, Non-deploy, or Rollover events) that have occurred during the SDM's lifetime.
- For Deployment Events, DTC B0052 (Deployment commanded) shall be recorded with the remainder of the data for this event even though it occurred after Event Enable.
- Once a firing loop has been commanded to be deployed, it will not be commanded to be deployed again during the same ignition cycle. Firing loop times for subsequent deployment type events, during the same ignition cycle, will record the deployment times as N/A.
- The GM parameter name is displayed in parentheses after the NHTSA Part 563 parameter name.
- The reported range of the longitudinal and lateral acceleration values is approximately  $\pm 50$  g.
- All data should be examined in conjunction with other available physical evidence from the vehicle and scene.

**Data Source:**

All SDM recorded data is measured, calculated, and stored internally, except for the following:

- Vehicle Status Data (Pre-Crash) is transmitted by the Body Control Module, via the vehicle's communication network.
- The Belt Switch Circuit is wired directly to the SDM.

**Data Element Sign Convention:**

The following table provides an explanation of the sign notation for data elements that may be included in this CDR report. Directional references to sign notation are all from the perspective of the driver when seated in the vehicle facing the direction of forward vehicle travel.

| Data Element Name            | Positive Sign Notation Indicates |
|------------------------------|----------------------------------|
| Longitudinal Acceleration    | Forward                          |
| Longitudinal Velocity Change | Forward                          |
| Lateral Acceleration         | Left to Right                    |
| Lateral Velocity Change      | Left to Right                    |
| Vertical Acceleration        | Downward                         |
| Roll Rate                    | Clockwise Rotation               |

**Hexadecimal Data:**

Data that the vehicle manufacturer has specified for data retrieval is shown in the hexadecimal data section of the CDR report. The hexadecimal data section of the CDR report may contain data that is not translated by the CDR program. The control module contains additional data that is not retrievable by the CDR tool.

01048\_SDM11P-autoliv\_r010

**System Status at Time of Retrieval**

|   |           |
|---|-----------|
| Dynamic Deployment Event Counter                            | 0         |
| Multi-Event, Number of Events (Dynamic Event Counter)       | 1         |
| Dynamic OnStar Notification Event Counter                   | 0         |
| Ignition Cycle, Download (Ignition Cycles at Investigation) | 7062      |
| End Model Part Number                                       | 00CF45AC  |
| System Type   | Autoliv   |
| Software Module Identifier 1                                | 00CF53F0  |
| Software Module Identifier 2                                | 0160D377  |
| Manufacturing Traceability Data, Component Identifier       | AS        |
| Manufacturing Traceability Data, Part Number/Broadcast Code | 3788      |
| Manufacturing Traceability Data, Supplier Code              | E         |
| Manufacturing Traceability Data, Traceability Number        | 050410534 |
| ESS # 1 Traceability Data, Component Identifier             | AU        |
| ESS # 1 Traceability Data, Part Number/Broadcast Code       | 2577      |
| ESS # 1 Traceability Data, Supplier Code                    | E         |
| ESS # 1 Traceability Data, Traceability Number              | 019248B94 |
| ESS # 2 Traceability Data, Component Identifier             | AT        |
| ESS # 2 Traceability Data, Part Number/Broadcast Code       | 2577      |
| ESS # 2 Traceability Data, Supplier Code                    | E         |
| ESS # 2 Traceability Data, Traceability Number              | 01925F3A5 |
| ESS # 3 Traceability Data, Component Identifier             | AH        |
| ESS # 3 Traceability Data, Part Number/Broadcast Code       | 2577      |
| ESS # 3 Traceability Data, Supplier Code                    | E         |
| ESS # 3 Traceability Data, Traceability Number              | 01923CD25 |
| ESS # 4 Traceability Data, Component Identifier             | AJ        |
| ESS # 4 Traceability Data, Part Number/Broadcast Code       | 2577      |
| ESS # 4 Traceability Data, Supplier Code                    | E         |
| ESS # 4 Traceability Data, Traceability Number              | 019236B84 |
| ESS # 5 Traceability Data, Component Identifier             | DA        |
| ESS # 5 Traceability Data, Part Number/Broadcast Code       | 4936      |
| ESS # 5 Traceability Data, Supplier Code                    | E         |
| ESS # 5 Traceability Data, Traceability Number              | 019255B3A |
| ESS # 6 Traceability Data, Component Identifier             | DB        |
| ESS # 6 Traceability Data, Part Number/Broadcast Code       | 4936      |
| ESS # 6 Traceability Data, Supplier Code                    | E         |
| ESS # 6 Traceability Data, Traceability Number              | 0192748D5 |
| ESS # 7 Traceability Data, Component Identifier             | 00        |
| ESS # 7 Traceability Data, Part Number/Broadcast Code       | 0000      |
| ESS # 7 Traceability Data, Supplier Code                    | E         |
| ESS # 7 Traceability Data, Traceability Number              | 000000000 |
| ESS # 8 Traceability Data, Component Identifier             | 00        |
| ESS # 8 Traceability Data, Part Number/Broadcast Code       | 0000      |
| ESS # 8 Traceability Data, Supplier Code                    | E         |
| ESS # 8 Traceability Data, Traceability Number              | 000000000 |

### System Status at Event (Event Record 1)

|   |                     |
|---|---------------------|
| Event Record Type   | Non-Deployment      |
| OnStar Deployment Status Data Sent  | No                  |
| Complete file recorded (Event Recording Complete)   | Yes                 |
| Crash Record Locked   | No                  |
| OnStar SDM Recorded Vehicle Velocity Change Data Sent   | No                  |
| Deployment Event Counter  | 0                   |
| Multi-Event, Number of Events (Event Counter)   | 1                   |
| OnStar Notification Event Counter   | 0                   |
| Time From Event 1 to 2 (Time Between Events) (seconds)  | Data Not Available  |
| Ignition Cycle, Crash (Ignition Cycles at Event)  | 7030                |
| Algorithm Active: Frontal   | Yes                 |
| Algorithm Active: Side  | No                  |
| Algorithm Active: Rollover  | Yes                 |
| Algorithm Active: Rear  | No                  |
| Concurrent Event Flag Set   | No                  |
| Event Severity Status: Frontal Pretensioner   | No                  |
| Event Severity Status: Frontal Stage 1  | No                  |
| Event Severity Status: Frontal Stage 2  | No                  |
| Event Severity Status: Left Side  | No                  |
| Event Severity Status: Right Side   | No                  |
| Event Severity Status: Rear   | No                  |
| Event Severity Status: Rollover   | No                  |
| Safety Belt Status, Driver (Driver Belt Switch Circuit Status)  | Buckled             |
| Safety Belt Status, Right Front Passenger (Passenger Belt Switch Circuit Status)                                      | Not Buckled         |
| Center Front Row Belt Switch Circuit Status (If Equipped)   | Data Not Available  |
| Left Row 3 Belt Switch Circuit Status (If Equipped)   | Data Not Available  |
| Center Row 3 Belt Switch Circuit Status (If Equipped)   | Data Not Available  |
| Right Row 3 Belt Switch Circuit Status (If Equipped)  | Data Not Available  |
| Passenger Seat Occupancy Status   | Empty               |
| Occupant Size Right Front Passenger Child (Passenger Classification Status)   | No (Not Applicable) |
| Passenger Air Bag ON Indicator Status   | Off                 |
| Passenger Air Bag OFF Indicator Status  | On                  |
| Low Tire Pressure Warning Lamp Status 0.5 Seconds Prior to Time Zero  | Off                 |
| Frontal Air Bag Warning Lamp (SIR Warning Lamp Status 0.5 Seconds Prior to Time Zero)                                 | On                  |
| SIR Warning Lamp ON/OFF Time Continuously (seconds)   | 16760               |
| Number of Ignition Cycles SIR Warning Lamp was ON/OFF Continuously  | 16                  |
| Ignition Cycles Since DTCs Were Last Cleared 0.5 Seconds Prior to Time Zero   | 253                 |
| Maximum Delta-V, Longitudinal (Maximum Longitudinal SDM Recorded Vehicle Velocity Change for FSR Event) MPH [km/h]    | -7 [-11]            |
| Time, Maximum Delta-V (Time From FSR Time Zero to Maximum Longitudinal SDM Recorded Vehicle Velocity Change)(msec)    | 122                 |
| Maximum Delta-V, Lateral (Maximum Lateral SDM Recorded Vehicle Velocity Change for FSR Event) MPH [km/h]              | 2 [ 4]              |
| Time Maximum Delta-V, Lateral (Time From FSR Time Zero to Maximum Lateral SDM Recorded Vehicle Velocity Change)(msec) | 68                  |



### **DTCs Present at Time of Event (Event Record 1)**

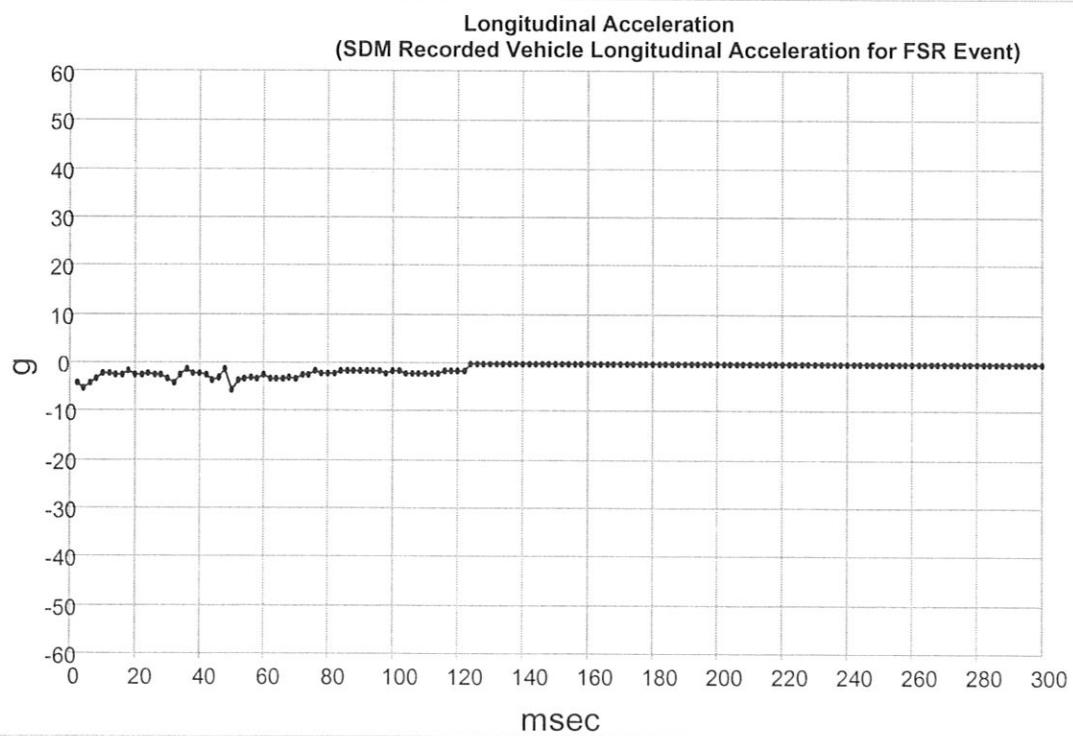
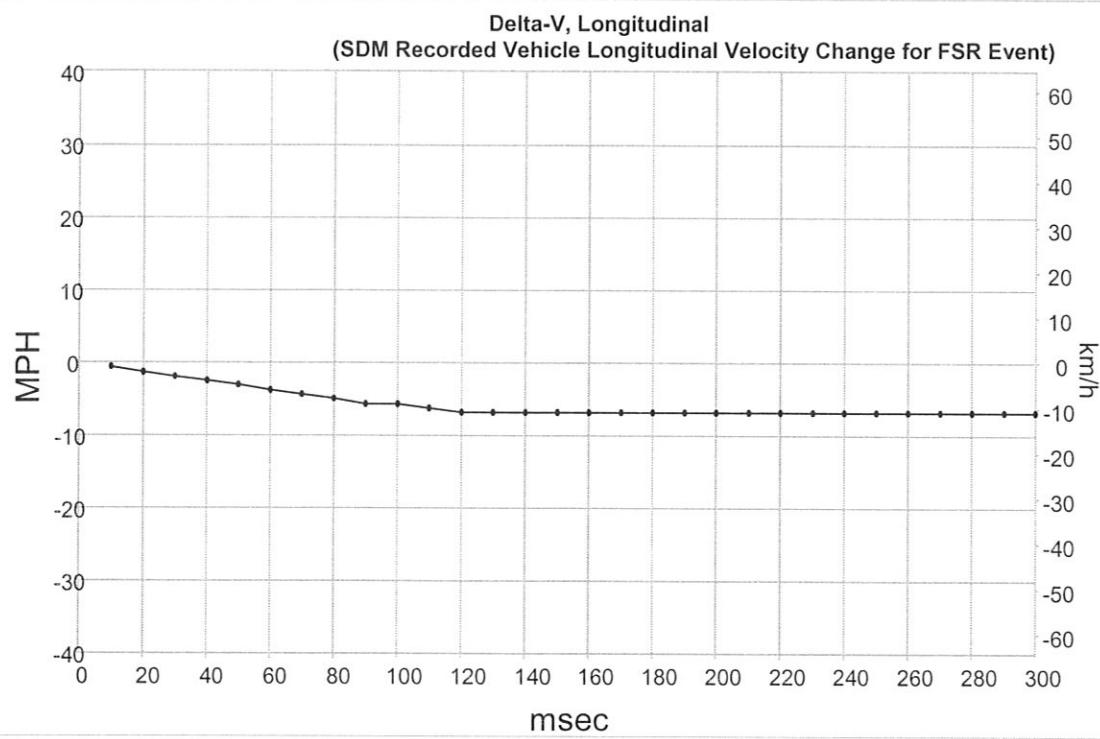
B0022-0D

[REDACTED]

**Event Data (Event Record 1)**

|  |                    |
|--|--------------------|
| Driver 1st Stage Deployment Loop Commanded   | No                 |
| Passenger 1st Stage Deployment Loop Commanded  | No                 |
| Driver 2nd Stage Deployment Loop Commanded   | No                 |
| Passenger 2nd Stage Deployment Loop Commanded  | No                 |
| Driver Pretensioner Deployment Loop #1 Commanded   | No                 |
| Passenger Pretensioner Deployment Loop #1 Commanded  | No                 |
| Driver Pretensioner Deployment Loop #2 Commanded   | No                 |
| Passenger Pretensioner Deployment Loop #2 Commanded  | No                 |
| Driver Thorax Loop Commanded   | No                 |
| Passenger Thorax Loop Commanded  | No                 |
| Left Row 1 Roof Rail/Head Curtain Loop Commanded   | No                 |
| Right Row 1 Roof Rail/Head Curtain Loop Commanded  | No                 |
| Frontal Air Bag Deployment, Time to 1st Stage Deployment, Driver (Driver 1st Stage Time From Time Zero to Deployment Command Criteria Met) (msec)                      | Data Not Available |
| Frontal Air Bag Deployment, Time to 2nd Stage, Driver (Driver 2nd Stage Time From Time Zero to Deployment Command Criteria Met) (msec)                                 | Data Not Available |
| Frontal Air Bag Deployment, Time to 1st Stage Deployment, Right Front Passenger (Passenger 1st Stage Time From Time Zero to Deployment Command Criteria Met) (msec)    | Data Not Available |
| Frontal Air Bag Deployment, Time to 2nd Stage, Right Front Passenger (Passenger 2nd Stage Time From Time Zero to Deployment Command Criteria Met) (msec)               | Data Not Available |
| Side air bag deployment, time to deploy, driver (Driver Thorax/Curtain Time From Time Zero to Deployment Command Criteria Met) (msec)                                  | Data Not Available |
| Side air bag deployment, time to deploy, right front passenger (Passenger Thorax/Curtain Time From Time Zero to Deployment Command Criteria Met) (msec)                | Data Not Available |
| Pretensioner Deployment, Time to Fire, Driver (Driver Pretensioner Time From Time Zero to Deployment Loop #1 or Loop #2 Command Criteria Met) (msec)                   | Data Not Available |
| Pretensioner Deployment, Time to Fire, Right Front Passenger (Passenger Pretensioner Time From Time Zero to Deployment Loop #1 or Loop #2 Command Criteria Met) (msec) | Data Not Available |

### Longitudinal Crash Pulse (Event Record 1)



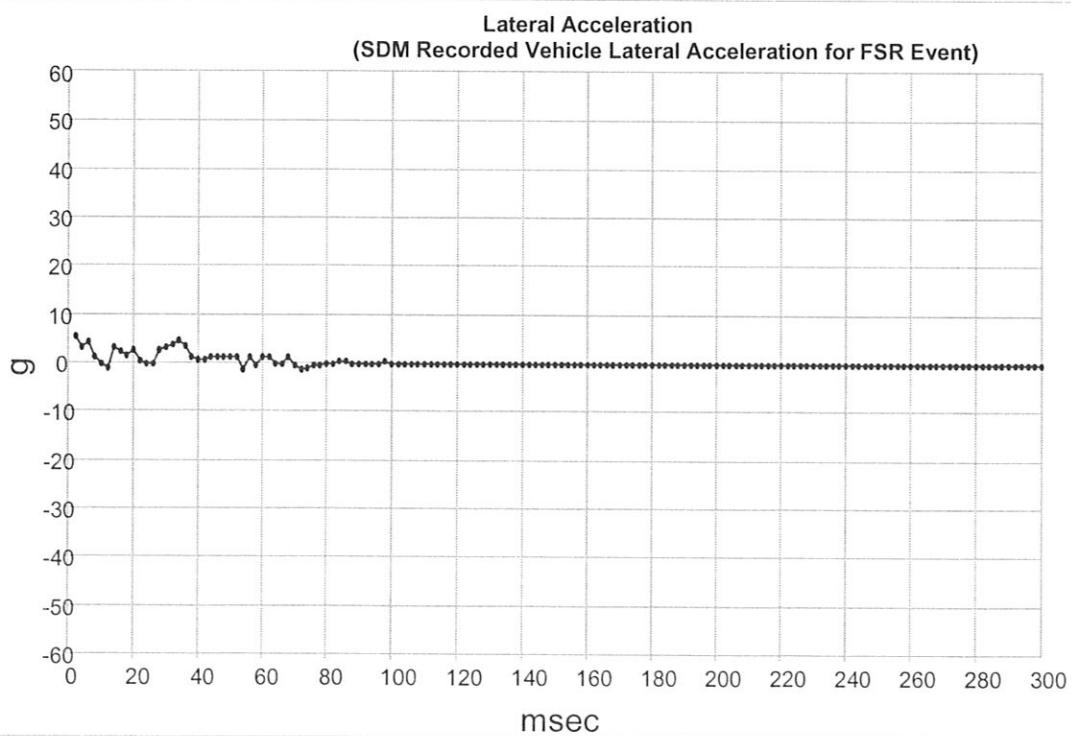
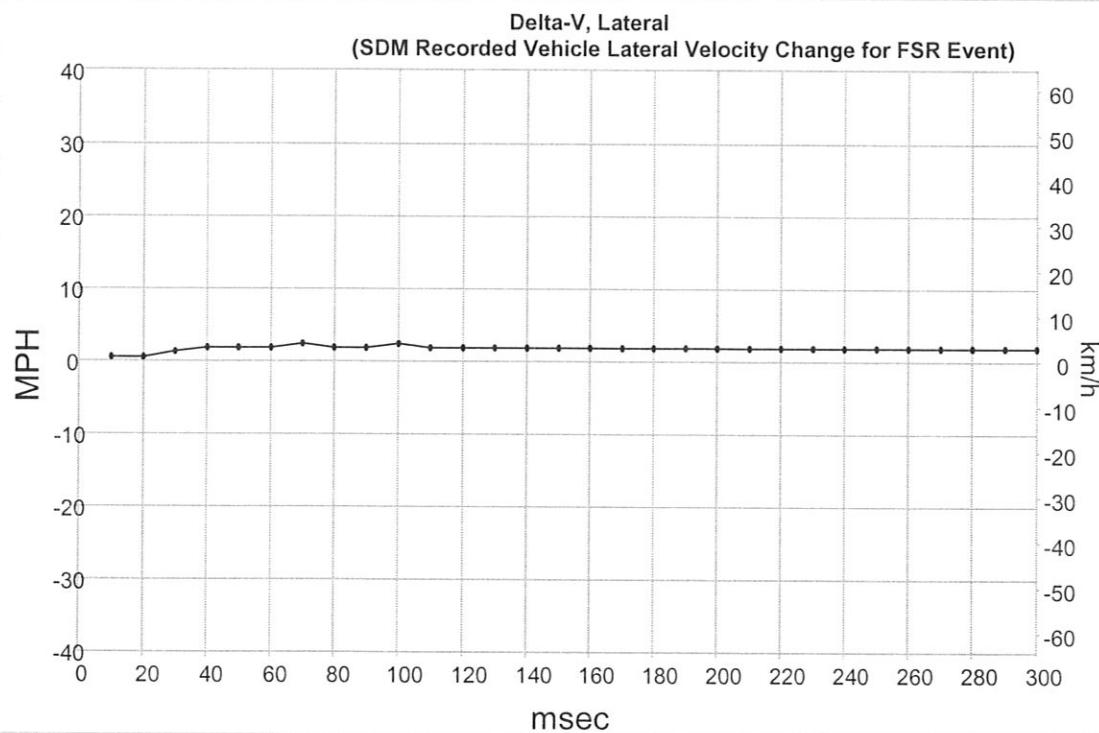
**Longitudinal Crash Pulse (Event Record 1)**

| Time<br>(msec) | Delta-V, Longitudinal<br>(SDM Recorded Vehicle Longitudinal<br>Velocity Change for FSR Event)<br>(MPH) | Delta-V, Longitudinal<br>(SDM Recorded Vehicle Longitudinal<br>Velocity Change for FSR Event)<br>(km/h) |
|----------------|--|---|
| 10             | -0.6   | -1.0  |
| 20             | -1.2   | -2.0  |
| 30             | -1.9   | -3.0  |
| 40             | -2.5   | -4.0  |
| 50             | -3.1   | -5.0  |
| 60             | -3.7   | -6.0  |
| 70             | -4.3   | -7.0  |
| 80             | -5.0   | -8.0  |
| 90             | -5.6   | -9.0  |
| 100            | -5.6   | -9.0  |
| 110            | -6.2   | -10.0   |
| 120            | -6.8   | -11.0   |
| 130            | -6.8   | -11.0   |
| 140            | -6.8   | -11.0   |
| 150            | -6.8   | -11.0   |
| 160            | -6.8   | -11.0   |
| 170            | -6.8   | -11.0   |
| 180            | -6.8   | -11.0   |
| 190            | -6.8   | -11.0   |
| 200            | -6.8   | -11.0   |
| 210            | -6.8   | -11.0   |
| 220            | -6.8   | -11.0   |
| 230            | -6.8   | -11.0   |
| 240            | -6.8   | -11.0   |
| 250            | -6.8   | -11.0   |
| 260            | -6.8   | -11.0   |
| 270            | -6.8   | -11.0   |
| 280            | -6.8   | -11.0   |
| 290            | -6.8   | -11.0   |
| 300            | -6.8   | -11.0   |

**Longitudinal Crash Pulse (Event Record 1)**

| Time (msec) | Longitudinal Acceleration (SDM Recorded Vehicle Longitudinal Acceleration for FSR Event) (g) | Time (msec) | Longitudinal Acceleration (SDM Recorded Vehicle Longitudinal Acceleration for FSR Event) (g) | Time (msec) | Longitudinal Acceleration (SDM Recorded Vehicle Longitudinal Acceleration for FSR Event) (g) |
|-------------|--|-------------|--|-------------|--|
| 2           | -4.2   | 102         | -1.8   | 202         | -0.2   |
| 4           | -5.4   | 104         | -2.2   | 204         | -0.2   |
| 6           | -4.2   | 106         | -2.2   | 206         | -0.2   |
| 8           | -3.4   | 108         | -2.2   | 208         | -0.2   |
| 10          | -2.2   | 110         | -2.2   | 210         | -0.2   |
| 12          | -2.2   | 112         | -2.2   | 212         | -0.2   |
| 14          | -2.6   | 114         | -2.2   | 214         | -0.2   |
| 16          | -2.6   | 116         | -1.8   | 216         | -0.2   |
| 18          | -1.8   | 118         | -1.8   | 218         | -0.2   |
| 20          | -2.6   | 120         | -1.8   | 220         | -0.2   |
| 22          | -2.6   | 122         | -1.8   | 222         | -0.2   |
| 24          | -2.2   | 124         | -0.2   | 224         | -0.2   |
| 26          | -2.6   | 126         | -0.2   | 226         | -0.2   |
| 28          | -2.6   | 128         | -0.2   | 228         | -0.2   |
| 30          | -3.4   | 130         | -0.2   | 230         | -0.2   |
| 32          | -4.2   | 132         | -0.2   | 232         | -0.2   |
| 34          | -2.6   | 134         | -0.2   | 234         | -0.2   |
| 36          | -1.4   | 136         | -0.2   | 236         | -0.2   |
| 38          | -2.2   | 138         | -0.2   | 238         | -0.2   |
| 40          | -2.2   | 140         | -0.2   | 240         | -0.2   |
| 42          | -2.6   | 142         | -0.2   | 242         | -0.2   |
| 44          | -3.8   | 144         | -0.2   | 244         | -0.2   |
| 46          | -3.0   | 146         | -0.2   | 246         | -0.2   |
| 48          | -1.4   | 148         | -0.2   | 248         | -0.2   |
| 50          | -5.8   | 150         | -0.2   | 250         | -0.2   |
| 52          | -3.8   | 152         | -0.2   | 252         | -0.2   |
| 54          | -3.4   | 154         | -0.2   | 254         | -0.2   |
| 56          | -3.0   | 156         | -0.2   | 256         | -0.2   |
| 58          | -3.4   | 158         | -0.2   | 258         | -0.2   |
| 60          | -2.6   | 160         | -0.2   | 260         | -0.2   |
| 62          | -3.4   | 162         | -0.2   | 262         | -0.2   |
| 64          | -3.4   | 164         | -0.2   | 264         | -0.2   |
| 66          | -3.4   | 166         | -0.2   | 266         | -0.2   |
| 68          | -3.0   | 168         | -0.2   | 268         | -0.2   |
| 70          | -3.4   | 170         | -0.2   | 270         | -0.2   |
| 72          | -2.6   | 172         | -0.2   | 272         | -0.2   |
| 74          | -2.6   | 174         | -0.2   | 274         | -0.2   |
| 76          | -1.8   | 176         | -0.2   | 276         | -0.2   |
| 78          | -2.2   | 178         | -0.2   | 278         | -0.2   |
| 80          | -2.2   | 180         | -0.2   | 280         | -0.2   |
| 82          | -2.2   | 182         | -0.2   | 282         | -0.2   |
| 84          | -1.8   | 184         | -0.2   | 284         | -0.2   |
| 86          | -1.8   | 186         | -0.2   | 286         | -0.2   |
| 88          | -1.8   | 188         | -0.2   | 288         | -0.2   |
| 90          | -1.8   | 190         | -0.2   | 290         | -0.2   |
| 92          | -1.8   | 192         | -0.2   | 292         | -0.2   |
| 94          | -1.8   | 194         | -0.2   | 294         | -0.2   |
| 96          | -1.8   | 196         | -0.2   | 296         | -0.2   |
| 98          | -2.2   | 198         | -0.2   | 298         | -0.2   |
| 100         | -1.8   | 200         | -0.2   | 300         | -0.2   |

### Lateral Crash Pulse (Event Record 1)



**Lateral Crash Pulse (Event Record 1)**

| Time<br>(msec) | Delta-V, Lateral<br>(SDM Recorded Vehicle Lateral<br>Velocity Change for FSR Event)<br>(MPH) | Delta-V, Lateral<br>(SDM Recorded Vehicle Lateral<br>Velocity Change for FSR Event)<br>(km/h) |
|----------------|--|---|
| 10             | 0.6  | 1.0   |
| 20             | 0.6  | 1.0   |
| 30             | 1.2  | 2.0   |
| 40             | 1.9  | 3.0   |
| 50             | 1.9  | 3.0   |
| 60             | 1.9  | 3.0   |
| 70             | 2.5  | 4.0   |
| 80             | 1.9  | 3.0   |
| 90             | 1.9  | 3.0   |
| 100            | 2.5  | 4.0   |
| 110            | 1.9  | 3.0   |
| 120            | 1.9  | 3.0   |
| 130            | 1.9  | 3.0   |
| 140            | 1.9  | 3.0   |
| 150            | 1.9  | 3.0   |
| 160            | 1.9  | 3.0   |
| 170            | 1.9  | 3.0   |
| 180            | 1.9  | 3.0   |
| 190            | 1.9  | 3.0   |
| 200            | 1.9  | 3.0   |
| 210            | 1.9  | 3.0   |
| 220            | 1.9  | 3.0   |
| 230            | 1.9  | 3.0   |
| 240            | 1.9  | 3.0   |
| 250            | 1.9  | 3.0   |
| 260            | 1.9  | 3.0   |
| 270            | 1.9  | 3.0   |
| 280            | 1.9  | 3.0   |
| 290            | 1.9  | 3.0   |
| 300            | 1.9  | 3.0   |



**Lateral Crash Pulse (Event Record 1)**

| Time (msec) | Lateral Acceleration (SDM Recorded Vehicle Lateral Acceleration for FSR Event) (g) | Time (msec) | Lateral Acceleration (SDM Recorded Vehicle Lateral Acceleration for FSR Event) (g) | Time (msec) | Lateral Acceleration (SDM Recorded Vehicle Lateral Acceleration for FSR Event) (g) |
|-------------|--|-------------|--|-------------|--|
| 2           | 5.4  | 102         | -0.2   | 202         | -0.2   |
| 4           | 3.0  | 104         | -0.2   | 204         | -0.2   |
| 6           | 4.2  | 106         | -0.2   | 206         | -0.2   |
| 8           | 1.0  | 108         | -0.2   | 208         | -0.2   |
| 10          | -0.2   | 110         | -0.2   | 210         | -0.2   |
| 12          | -1.0   | 112         | -0.2   | 212         | -0.2   |
| 14          | 3.0  | 114         | -0.2   | 214         | -0.2   |
| 16          | 2.2  | 116         | -0.2   | 216         | -0.2   |
| 18          | 1.4  | 118         | -0.2   | 218         | -0.2   |
| 20          | 2.6  | 120         | -0.2   | 220         | -0.2   |
| 22          | 0.2  | 122         | -0.2   | 222         | -0.2   |
| 24          | -0.2   | 124         | -0.2   | 224         | -0.2   |
| 26          | -0.2   | 126         | -0.2   | 226         | -0.2   |
| 28          | 2.6  | 128         | -0.2   | 228         | -0.2   |
| 30          | 3.0  | 130         | -0.2   | 230         | -0.2   |
| 32          | 3.8  | 132         | -0.2   | 232         | -0.2   |
| 34          | 4.6  | 134         | -0.2   | 234         | -0.2   |
| 36          | 3.4  | 136         | -0.2   | 236         | -0.2   |
| 38          | 1.0  | 138         | -0.2   | 238         | -0.2   |
| 40          | 0.6  | 140         | -0.2   | 240         | -0.2   |
| 42          | 0.6  | 142         | -0.2   | 242         | -0.2   |
| 44          | 1.0  | 144         | -0.2   | 244         | -0.2   |
| 46          | 1.0  | 146         | -0.2   | 246         | -0.2   |
| 48          | 1.0  | 148         | -0.2   | 248         | -0.2   |
| 50          | 1.0  | 150         | -0.2   | 250         | -0.2   |
| 52          | 1.0  | 152         | -0.2   | 252         | -0.2   |
| 54          | -1.4   | 154         | -0.2   | 254         | -0.2   |
| 56          | 1.0  | 156         | -0.2   | 256         | -0.2   |
| 58          | -0.6   | 158         | -0.2   | 258         | -0.2   |
| 60          | 1.0  | 160         | -0.2   | 260         | -0.2   |
| 62          | 1.0  | 162         | -0.2   | 262         | -0.2   |
| 64          | -0.2   | 164         | -0.2   | 264         | -0.2   |
| 66          | -0.2   | 166         | -0.2   | 266         | -0.2   |
| 68          | 1.0  | 168         | -0.2   | 268         | -0.2   |
| 70          | -0.6   | 170         | -0.2   | 270         | -0.2   |
| 72          | -1.4   | 172         | -0.2   | 272         | -0.2   |
| 74          | -1.0   | 174         | -0.2   | 274         | -0.2   |
| 76          | -0.6   | 176         | -0.2   | 276         | -0.2   |
| 78          | -0.6   | 178         | -0.2   | 278         | -0.2   |
| 80          | -0.2   | 180         | -0.2   | 280         | -0.2   |
| 82          | -0.2   | 182         | -0.2   | 282         | -0.2   |
| 84          | 0.2  | 184         | -0.2   | 284         | -0.2   |
| 86          | 0.2  | 186         | -0.2   | 286         | -0.2   |
| 88          | -0.2   | 188         | -0.2   | 288         | -0.2   |
| 90          | -0.2   | 190         | -0.2   | 290         | -0.2   |
| 92          | -0.2   | 192         | -0.2   | 292         | -0.2   |
| 94          | -0.2   | 194         | -0.2   | 294         | -0.2   |
| 96          | -0.2   | 196         | -0.2   | 296         | -0.2   |
| 98          | 0.2  | 198         | -0.2   | 298         | -0.2   |
| 100         | -0.2   | 200         | -0.2   | 300         | -0.2   |

**Rollover Crash Pulse (Event Record 1)**  
**SDM Recorded Vehicle Roll Rate**

Contains No Recorded Data

**Rollover Crash Pulse (Event Record 1)**  
**Lateral Acceleration (SDM Recorded Vehicle Lateral Acceleration for Rollover Event)**

Contains No Recorded Data

**Vertical Crash Pulse (Event Record 1)**  
**Normal Acceleration (SDM Recorded Vehicle Vertical Acceleration for Rollover Event)**

Contains No Recorded Data



**Pre-Crash Data -5.0 to -0.5 sec (Event Record 1)**

| Times<br>(sec) | Accelerator<br>Pedal, % Full<br>(Accelerator<br>Pedal<br>Position) | Service Brake<br>(Brake Switch<br>Circuit State) | Engine RPM<br>(Engine<br>Speed) | Engine<br>Throttle, %<br>Full (Throttle<br>Position) | Speed, Vehicle<br>Indicated (Vehicle<br>Speed) (MPH<br>[km/h]) |
|----------------|--|--|---------------------------------|--|--|
| -5.0           | 0  | Off  | 1280                            | 12   | 27 [ 43]   |
| -4.5           | 16   | Off  | 1344                            | 18   | 26 [ 42]   |
| -4.0           | 17   | Off  | 1472                            | 28   | 26 [ 42]   |
| -3.5           | 18   | Off  | 1472                            | 28   | 27 [ 43]   |
| -3.0           | 20   | Off  | 1472                            | 30   | 27 [ 44]   |
| -2.5           | 21   | Off  | 1408                            | 31   | 28 [ 45]   |
| -2.0           | 19   | Off  | 1408                            | 28   | 29 [ 46]   |
| -1.5           | 17   | Off  | 1472                            | 27   | 29 [ 47]   |
| -1.0           | 9  | Off  | 1536                            | 28   | 29 [ 47]   |
| -0.5           | 0  | On   | 1280                            | 13   | 24 [ 39]   |

**Pre-Crash Data -2.0 to -0.5 sec (Event Record 1)**

| Times<br>(sec) | Cruise<br>Control Active | Cruise<br>Control<br>Resume<br>Switch Active | Cruise<br>Control Set<br>Switch Active | Engine<br>Torque (lb-ft<br>[N-m]) | Reduced Engine<br>Power Mode<br>Indicator |
|----------------|--------------------------|--|--|-----------------------------------|---|
| -2.0           | No                       | No   | No                                     | 127 [ 172]                        | Off                                       |
| -1.5           | No                       | No   | No                                     | 93 [ 126]                         | Off                                       |
| -1.0           | No                       | No   | No                                     | 93 [ 126]                         | Off                                       |
| -0.5           | No                       | No   | No                                     | 31 [ 42]                          | Off                                       |

## Hexadecimal Data

DPID \$11  
FF F1 00 FC C0 7C 00

DPID \$15  
01 02 03 04 07 08 05

DPID \$16  
06 09 0A 0D 0E 00 00

DPID \$17  
00 22 00 00 00 00 00

DPID \$32  
00 FD 1B 96 00 00 00

DPID \$35  
78 00 00 00 00 00 00

DID \$01  
41 55 32 35 37 37 45 30 31 39 32 34 38 42 39 34

DID \$03  
41 54 32 35 37 37 45 30 31 39 32 35 46 33 41 35

DID \$05  
41 48 32 35 37 37 45 30 31 39 32 33 43 44 32 35

DID \$07  
41 4A 32 35 37 37 45 30 31 39 32 33 36 42 38 34

DID \$09  
44 41 34 39 33 36 45 30 31 39 32 35 35 42 33 41

DID \$0B  
44 42 34 39 33 36 45 30 31 39 32 37 34 38 44 35

DID \$0D  
30 30 30 30 30 30 45 30 30 30 30 30 30 30 30 30

DID \$0F  
30 30 30 30 30 30 45 30 30 30 30 30 30 30 30 30

DID \$30  
00 00 01 00

DID \$9A  
04 01

DID \$B4  
41 53 33 37 38 38 45 30 35 30 34 31 30 35 33 34

DID \$C1  
00 CF 53 F0

DID \$C2  
01 60 D3 77

DID \$CB  
00 CF 45 AC

DID \$31

0000 A5 00 00 00 01 00 05 1B 76 FF

[REDACTED]

0010 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
0020 4C FC FC F0 00 00 C0 10 00 09  
0030 11 13 15 14 12 11 10 00 40 00  
0040 00 00 00 00 00 14 18 17 16 16  
0050 17 17 17 15 14 06 F5 07 9B 07  
0060 9D 07 F9 0D 1C 1B 1C 1F 1E 1C  
0070 1C 12 0C 27 2F 2F 2E 2D 2C 2B  
0080 2A 2A 2B 10 06 8C 00 10 FD 80  
0090 22 0D 00 00 00 00 00 00 00 00 00  
0100 00 00 00 00 00 00 00 00 00 00 00  
0110 00 00 00 00 00 00 74 3D 83 22  
0120 FF FF FF FF FF FF FF 7E 80  
0130 7D 80 7C 81 7B 82 7A 82 79 82  
0140 78 83 77 82 76 82 76 83 75 82  
0150 74 82 74 82 74 82 74 82 74 82  
0160 74 82 74 82 74 82 74 82 74 82  
0170 74 82 74 82 74 82 74 82 74 82  
0180 74 82 74 82 74 82 74 82 75 8D  
0190 72 87 75 8A 77 82 7A 7F 7A 7D  
0200 79 87 79 85 7B 83 79 86 79 80  
0210 7A 7F 79 7F 79 86 77 87 75 89  
0220 79 8B 7C 88 7A 82 7A 81 79 81  
0230 76 82 78 82 7C 82 71 82 76 82  
0240 77 7C 78 82 77 7E 79 82 77 82  
0250 77 7F 77 7F 78 82 77 7E 79 7C  
0260 79 7D 7B 7E 7A 7E 7A 7F 7A 7F  
0270 7B 80 7B 80 7B 7F 7B 7F 7B 7F  
0280 7B 7F 7B 7F 7A 80 7B 7F 7B 7F  
0290 7A 7F 7A 7F 7A 7F 7A 7F 7A 7F  
0300 7A 7F 7B 7F 7B 7F 7B 7F 7B 7F  
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| 0960 | FF |
| 0970 | FF |
| 0980 | FF |
| 0990 | FF |
| 1000 | FF |
| 1010 | FF |
| 1020 | FF |
| 1030 | FF |
| 1040 | FF |
| 1050 | FF |
| 1060 | FF |
| 1070 | FF |
| 1080 | FF |
| 1090 | FF |
| 1100 | FF |
| 1110 | FF |
| 1120 | FF |
| 1130 | FF |
| 1140 | FF |
| 1150 | FF |
| 1160 | FF |
| 1170 | FF |
| 1180 | FF |
| 1190 | FF |
| 1200 | FF |    |    |    |    |    |    |    |    |    |    |

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