

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	
User	
Case Number	
EDR Data Imaging Date	01/28/2016
Crash Date	
Filename	OPEL_ACM.CDRX
Saved on	Thursday, January 28 2016 at 15:20:49
Collected with CDR version	Crash Data Retrieval Tool 16.4
Reported with CDR version	Crash Data Retrieval Tool 16.4
EDR Device Type	Airbag Control Module
Event(s) recovered	Deployment

Comments

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. Non-Deployment Events can be overwritten after 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.

There are also two types of recorded crash events for Rollover Events. The first is the Non-Deployment (Non-rollover) Event. A Non-Deployment Event records data but does not deploy the air bag(s). A Non-Deployment Event contains Pre-Crash and Crash data. Non-Deployment Rollover event follow the same rules as FSR Non-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 300 milliseconds of data after time zero. The SDM will also record 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 deployment times for subsequent deployment type events, during the same ignition cycle, will not be recorded. Also, forced timer loops, will not be shown as being commanded to deploy. Loops without their own independent deployment calibration are called "forced timer loops." Examples of a forced timer loops are Pretensioner Deployment Loop #2 and Knee Deployment Loop.
- 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 ± 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.

01042_SDM10P-autoliv_r015

System Status at Time of Retrieval

Dynamic Deployment Event Counter	1
Multi-Event, Number of Events (Dynamic Event Counter)	1
Dynamic OnStar Notification Event Counter	1
Vehicle Identification Number (VIN)	'
Ignition Cycle, Download (Ignition Cycles at Investigation)	5933
End Model Part Number	00CF4CCF
System Type	Autoliv
Software Module Identifier 1	00CF4CCB
Software Module Identifier 2	015D5A66
Software Module Identifier 3	00CF2D7D
Manufacturing Traceability Data, Component Identifier	AS
Manufacturing Traceability Data, Part Number/Broadcast Code	5615
Manufacturing Traceability Data, Supplier Code	E
Manufacturing Traceability Data, Traceability Number	050126982
ESS # 1 Traceability Data, Component Identifier	AU
ESS # 1 Traceability Data, Part Number/Broadcast Code	0000
ESS # 1 Traceability Data, Supplier Code	E
ESS # 1 Traceability Data, Traceability Number	000000000
ESS # 2 Traceability Data, Component Identifier	AT
ESS # 2 Traceability Data, Part Number/Broadcast Code	0000
ESS # 2 Traceability Data, Supplier Code	E
ESS # 2 Traceability Data, Traceability Number	000000000
ESS # 3 Traceability Data, Component Identifier	AH
ESS # 3 Traceability Data, Part Number/Broadcast Code	0000
ESS # 3 Traceability Data, Supplier Code	E
ESS # 3 Traceability Data, Traceability Number	000000000
ESS # 4 Traceability Data, Component Identifier	AJ
ESS # 4 Traceability Data, Part Number/Broadcast Code	0000
ESS # 4 Traceability Data, Supplier Code	E
ESS # 4 Traceability Data, Traceability Number	000000000
ESS # 5 Traceability Data, Component Identifier	DA
ESS # 5 Traceability Data, Part Number/Broadcast Code	0000
ESS # 5 Traceability Data, Supplier Code	E
ESS # 5 Traceability Data, Traceability Number	000000000
ESS # 6 Traceability Data, Component Identifier	DB
ESS # 6 Traceability Data, Part Number/Broadcast Code	0000
ESS # 6 Traceability Data, Supplier Code	E
ESS # 6 Traceability Data, Traceability Number	000000000
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	Deployment
OnStar Deployment Status Data Sent	Yes
Complete file recorded (Event Recording Complete)	Yes
Crash Record Locked	Yes
OnStar SDM Recorded Vehicle Velocity Change Data Sent	Yes
Deployment Event Counter	1
Multi-Event, Number of Events (Event Counter)	1
OnStar Notification Event Counter	1
Time From Event 1 to 2 (Time Between Events) (seconds)	Data Not Available
Ignition Cycle, Crash (Ignition Cycles at Event)	5921
Algorithm Active: Frontal	Yes
Algorithm Active: Side	Yes
Algorithm Active: Rollover	Yes
Algorithm Active: Rear	No
Concurrent Event Flag Set	No
Event Severity Status: Frontal Pretensioner	Yes
Event Severity Status: Frontal Stage 1	Yes
Event Severity Status: Frontal Stage 2	Yes
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 2 Belt Switch Circuit Status	Not Buckled
Right Row 2 Belt Switch Circuit Status	Not Buckled
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 SIR Suppression Switch Circuit Status	Enable
Passenger Air Bag ON Indicator Status	On
Passenger Air Bag OFF Indicator Status	Off
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)	Off
SIR Warning Lamp ON/OFF Time Continuously (seconds)	655330
Number of Ignition Cycles SIR Warning Lamp was ON/OFF Continuously	5807
Ignition Cycles Since DTCs Were Last Cleared 0.5 Seconds Prior to Time Zero	89
Maximum Delta-V, Longitudinal (Maximum Longitudinal SDM Recorded Vehicle Velocity Change for FSR Event) MPH [km/h]	-28 [-45]
Time, Maximum Delta-V (Time From FSR Time Zero to Maximum Longitudinal SDM Recorded Vehicle Velocity Change)(msec)	168
Maximum Delta-V, Lateral (Maximum Lateral SDM Recorded Vehicle Velocity Change for FSR Event) MPH [km/h]	3 [5]
Time Maximum Delta-V, Lateral (Time From FSR Time Zero to Maximum Lateral SDM Recorded Vehicle Velocity Change)(msec)	84

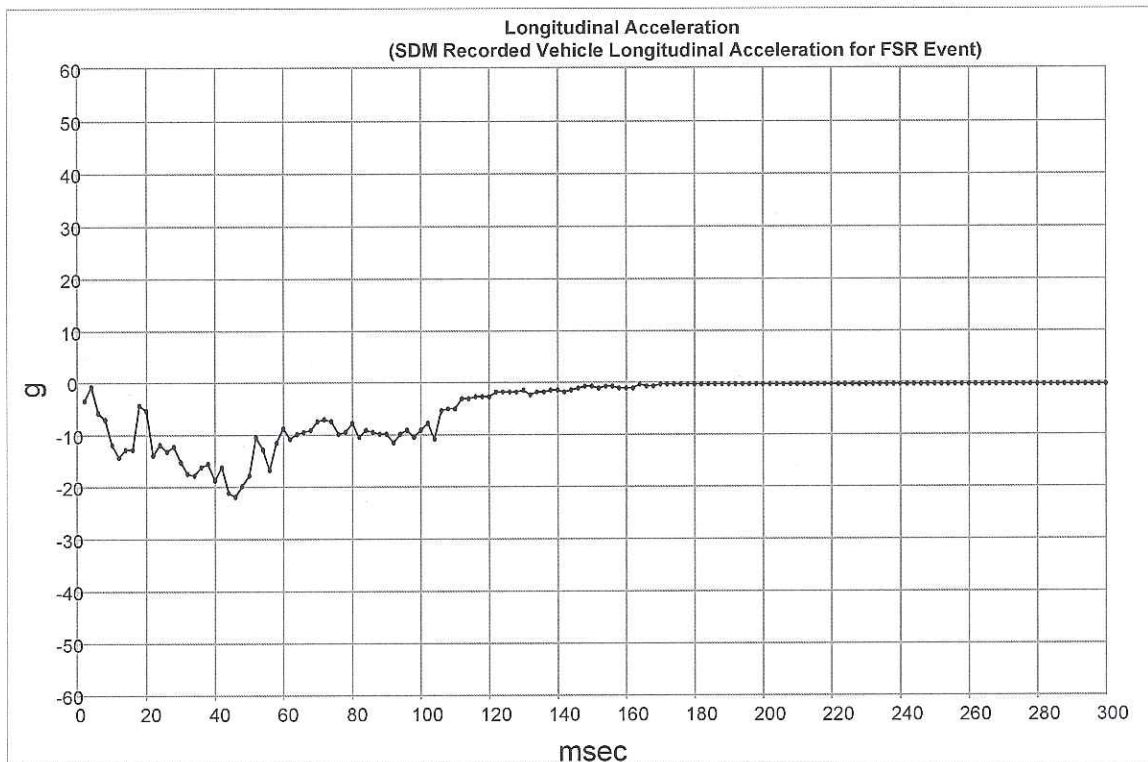
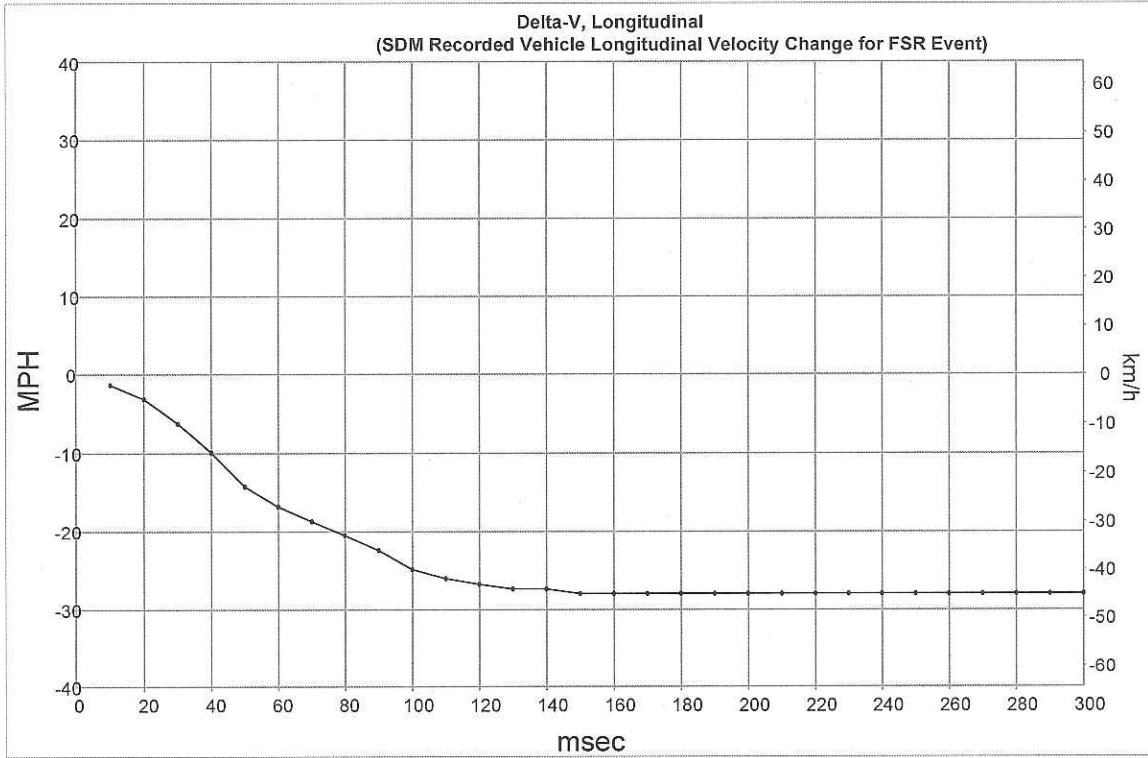
DTCs Present at Time of Event (Event Record 1)

B0052-00

Event Data (Event Record 1)

Driver 1st Stage Deployment Loop Commanded	Yes
Passenger 1st Stage Deployment Loop Commanded	Yes
Driver 2nd Stage Deployment Loop Commanded	Yes
Passenger 2nd Stage Deployment Loop Commanded	Yes
Driver Pretensioner Deployment Loop #1 Commanded	Yes
Passenger Pretensioner Deployment Loop #1 Commanded	Yes
Driver Pretensioner Deployment Loop #2 Commanded	Yes
Passenger Pretensioner Deployment Loop #2 Commanded	Yes
Driver Thorax Loop Commanded	No
Passenger Thorax Loop Commanded	No
Left Row 1 Roof Rail/Head Curtain Loop Commanded	Yes
Right Row 1 Roof Rail/Head Curtain Loop Commanded	Yes
Driver Knee Deployment Loop Commanded	Yes
Passenger Knee Deployment Loop Commanded	Yes
Frontal Air Bag Deployment, Time to 1st Stage Deployment, Driver (Driver 1st Stage Time From Time Zero to Deployment Command Criteria Met) (msec)	27
Frontal Air Bag Deployment, Time to 2nd Stage, Driver (Driver 2nd Stage Time From Time Zero to Deployment Command Criteria Met) (msec)	32
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)	27
Frontal Air Bag Deployment, Time to 2nd Stage, Right Front Passenger (Passenger 2nd Stage Time From Time Zero to Deployment Command Criteria Met) (msec)	37
Side air bag deployment, time to deploy, driver (Driver Thorax/Curtain Time From Time Zero to Deployment Command Criteria Met) (msec)	32
Side air bag deployment, time to deploy, right front passenger (Passenger Thorax/Curtain Time From Time Zero to Deployment Command Criteria Met) (msec)	32
Pretensioner Deployment, Time to Fire, Driver (Driver Pretensioner Time From Time Zero to Deployment Loop #1 or Loop #2 Command Criteria Met) (msec)	8
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)	8

Longitudinal Crash Pulse (Event Record 1)



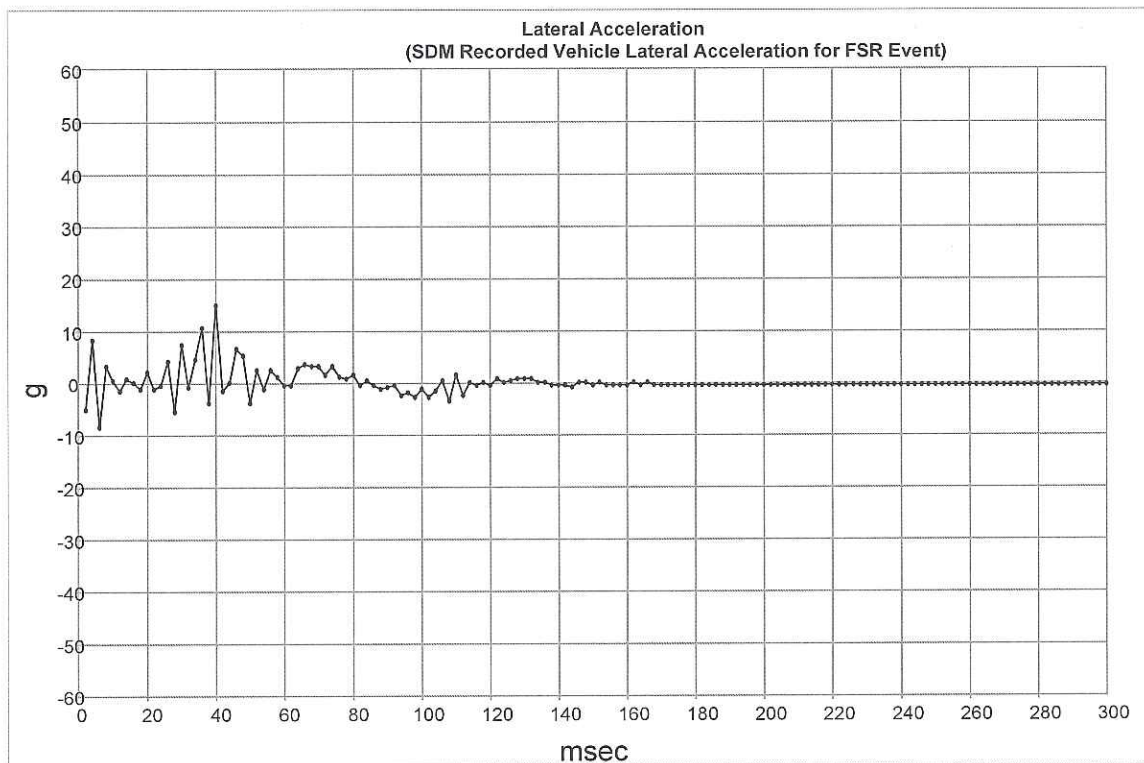
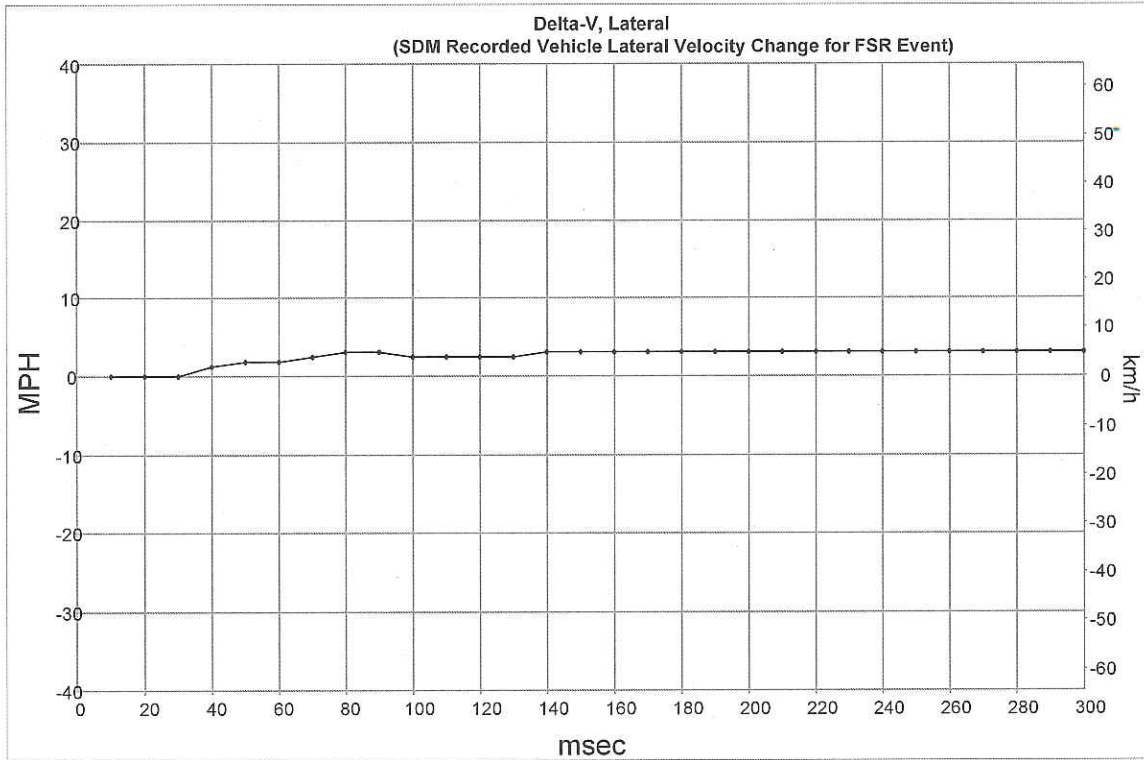
Longitudinal Crash Pulse (Event Record 1)

Time (msec)	Delta-V, Longitudinal (SDM Recorded Vehicle Longitudinal Velocity Change for FSR Event) (MPH)	Delta-V, Longitudinal (SDM Recorded Vehicle Longitudinal Velocity Change for FSR Event) (km/h)
10	-1.2	-2.0
20	-3.1	-5.0
30	-6.2	-10.0
40	-9.9	-16.0
50	-14.3	-23.0
60	-16.8	-27.0
70	-18.6	-30.0
80	-20.5	-33.0
90	-22.4	-36.0
100	-24.9	-40.0
110	-26.1	-42.0
120	-26.7	-43.0
130	-27.3	-44.0
140	-27.3	-44.0
150	-28.0	-45.0
160	-28.0	-45.0
170	-28.0	-45.0
180	-28.0	-45.0
190	-28.0	-45.0
200	-28.0	-45.0
210	-28.0	-45.0
220	-28.0	-45.0
230	-28.0	-45.0
240	-28.0	-45.0
250	-28.0	-45.0
260	-28.0	-45.0
270	-28.0	-45.0
280	-28.0	-45.0
290	-28.0	-45.0
300	-28.0	-45.0

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	-3.4	102	-7.8	202	-0.2
4	-0.6	104	-10.6	204	-0.2
6	-5.8	106	-5.4	206	-0.2
8	-7.0	108	-5.0	208	-0.2
10	-11.8	110	-5.0	210	-0.2
12	-14.2	112	-3.0	212	-0.2
14	-12.6	114	-3.0	214	-0.2
16	-12.6	116	-2.6	216	-0.2
18	-4.2	118	-2.6	218	-0.2
20	-5.4	120	-2.6	220	-0.2
22	-13.8	122	-1.8	222	-0.2
24	-11.8	124	-1.8	224	-0.2
26	-13.0	126	-1.8	226	-0.2
28	-12.2	128	-1.8	228	-0.2
30	-15.0	130	-1.4	230	-0.2
32	-17.4	132	-2.2	232	-0.2
34	-17.8	134	-1.8	234	-0.2
36	-16.2	136	-1.8	236	-0.2
38	-15.4	138	-1.4	238	-0.2
40	-18.6	140	-1.4	240	-0.2
42	-16.2	142	-1.8	242	-0.2
44	-21.0	144	-1.4	244	-0.2
46	-21.8	146	-1.0	246	-0.2
48	-19.8	148	-0.6	248	-0.2
50	-17.8	150	-0.6	250	-0.2
52	-10.2	152	-1.0	252	-0.2
54	-12.6	154	-0.6	254	-0.2
56	-16.6	156	-0.6	256	-0.2
58	-11.4	158	-1.0	258	-0.2
60	-8.6	160	-1.0	260	-0.2
62	-10.6	162	-1.0	262	-0.2
64	-9.8	164	-0.2	264	-0.2
66	-9.4	166	-0.6	266	-0.2
68	-9.0	168	-0.6	268	-0.2
70	-7.4	170	-0.2	270	-0.2
72	-7.0	172	-0.2	272	-0.2
74	-7.4	174	-0.2	274	-0.2
76	-9.8	176	-0.2	276	-0.2
78	-9.4	178	-0.2	278	-0.2
80	-7.8	180	-0.2	280	-0.2
82	-10.2	182	-0.2	282	-0.2
84	-9.0	184	-0.2	284	-0.2
86	-9.4	186	-0.2	286	-0.2
88	-9.8	188	-0.2	288	-0.2
90	-9.8	190	-0.2	290	-0.2
92	-11.4	192	-0.2	292	-0.2
94	-9.8	194	-0.2	294	-0.2
96	-9.0	196	-0.2	296	-0.2
98	-10.2	198	-0.2	298	-0.2
100	-9.0	200	-0.2	300	-0.2

Lateral Crash Pulse (Event Record 1)



Lateral Crash Pulse (Event Record 1)

Time (msec)	Delta-V, Lateral (SDM Recorded Vehicle Lateral Velocity Change for FSR Event) (MPH)	Delta-V, Lateral (SDM Recorded Vehicle Lateral Velocity Change for FSR Event) (km/h)
10	0.0	0.0
20	0.0	0.0
30	0.0	0.0
40	1.2	2.0
50	1.9	3.0
60	1.9	3.0
70	2.5	4.0
80	3.1	5.0
90	3.1	5.0
100	2.5	4.0
110	2.5	4.0
120	2.5	4.0
130	2.5	4.0
140	3.1	5.0
150	3.1	5.0
160	3.1	5.0
170	3.1	5.0
180	3.1	5.0
190	3.1	5.0
200	3.1	5.0
210	3.1	5.0
220	3.1	5.0
230	3.1	5.0
240	3.1	5.0
250	3.1	5.0
260	3.1	5.0
270	3.1	5.0
280	3.1	5.0
290	3.1	5.0
300	3.1	5.0

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	-5.0	102	-2.6	202	-0.2
4	8.2	104	-1.4	204	-0.2
6	-8.2	106	0.6	206	-0.2
8	3.4	108	-3.4	208	-0.2
10	0.6	110	1.8	210	-0.2
12	-1.4	112	-2.2	212	-0.2
14	1.0	114	0.2	214	-0.2
16	0.2	116	-0.2	216	-0.2
18	-1.0	118	0.2	218	-0.2
20	2.2	120	-0.2	220	-0.2
22	-1.0	122	1.0	222	-0.2
24	-0.2	124	0.2	224	-0.2
26	4.2	126	0.6	226	-0.2
28	-5.4	128	1.0	228	-0.2
30	7.4	130	1.0	230	-0.2
32	-0.6	132	1.0	232	-0.2
34	4.6	134	0.2	234	-0.2
36	10.6	136	0.2	236	-0.2
38	-3.8	138	-0.2	238	-0.2
40	15.0	140	-0.2	240	-0.2
42	-1.4	142	-0.2	242	-0.2
44	0.2	144	-0.6	244	-0.2
46	6.6	146	0.2	246	-0.2
48	5.4	148	0.2	248	-0.2
50	-3.8	150	-0.2	250	-0.2
52	2.6	152	0.2	252	-0.2
54	-1.0	154	-0.2	254	-0.2
56	2.6	156	-0.2	256	-0.2
58	1.4	158	-0.2	258	-0.2
60	-0.2	160	-0.2	260	-0.2
62	-0.2	162	0.2	262	-0.2
64	3.0	164	-0.2	264	-0.2
66	3.8	166	0.2	266	-0.2
68	3.4	168	-0.2	268	-0.2
70	3.4	170	-0.2	270	-0.2
72	1.8	172	-0.2	272	-0.2
74	3.4	174	-0.2	274	-0.2
76	1.4	176	-0.2	276	-0.2
78	1.0	178	-0.2	278	-0.2
80	1.8	180	-0.2	280	-0.2
82	-0.2	182	-0.2	282	-0.2
84	0.6	184	-0.2	284	-0.2
86	-0.2	186	-0.2	286	-0.2
88	-1.0	188	-0.2	288	-0.2
90	-0.6	190	-0.2	290	-0.2
92	-0.2	192	-0.2	292	-0.2
94	-2.2	194	-0.2	294	-0.2
96	-1.8	196	-0.2	296	-0.2
98	-2.6	198	-0.2	298	-0.2
100	-1.0	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 (sec)	Accelerator Pedal, % Full (Accelerator Pedal Position)	Service Brake (Brake Switch Circuit State)	Engine RPM (Engine Speed)	Engine Throttle, % Full (Throttle Position)	Speed, Vehicle Indicated (Vehicle Speed) (MPH [km/h])
-5.0	21	Off	2176	99	71 [115]
-4.5	21	Off	2176	99	71 [115]
-4.0	16	Off	2112	99	71 [114]
-3.5	16	Off	2048	99	71 [114]
-3.0	16	Off	1984	99	70 [113]
-2.5	16	Off	1920	99	70 [113]
-2.0	16	Off	1856	99	70 [113]
-1.5	16	Off	1792	99	70 [112]
-1.0	16	Off	1728	99	70 [112]
-0.5	16	Off	1664	99	70 [112]

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

Times (sec)	Cruise Control Active	Cruise Control Resume Switch Active	Cruise Control Set Switch Active	Engine Torque (lb-ft [N-m])	Reduced Engine Power Mode Indicator
-2.0	No	No	No	78 [106]	Off
-1.5	No	No	No	78 [106]	Off
-1.0	No	No	No	76 [104]	Off
-0.5	No	No	No	74 [100]	Off

Hexadecimal Data

DPID \$11
FF F3 00 FC E9 F4 00

DPID \$15
01 02 03 04 05 06 07

DPID \$16
08 09 0A 0D 0E 00 00

DPID \$17
13 14 00 00 00 00 00

DPID \$32
00 61 17 2D 00 00 00

DPID \$35
78 00 00 00 00 00 00

DID \$01
41 55 30 30 30 30 45 30 30 30 30 30 30 30 30

DID \$03
41 54 30 30 30 30 45 30 30 30 30 30 30 30 30

DID \$05
41 48 30 30 30 30 45 30 30 30 30 30 30 30 30

DID \$07
41 4A 30 30 30 30 45 30 30 30 30 30 30 30 30

DID \$09
44 41 30 30 30 30 45 30 30 30 30 30 30 30 30

DID \$0B
44 42 30 30 30 30 45 30 30 30 30 30 30 30 30

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

DID \$30
01 00 01 01

DID \$90
31 47 30 52 38 36 45 34 32 43 55 31 32 30 39 38 37

DID \$9A
04 01

DID \$B4
41 53 35 36 31 35 45 30 35 30 31 32 36 39 38 32

DID \$C1
00 CF 4C CB

DID \$C2
01 5D 5A 66

DID \$C3



00 CF 2D 7D

DID \$CB
00 CF 4C CF

DID \$31

```
0000 A5 F8 01 00 01 01 07 17 21 FF
0010 FF 00 00 00 0E EB C3 0C 00 00
0020 4C 30 FC F0 20 F0 40 40 10 10
0030 10 10 10 10 10 10 15 15 00 00
0040 00 00 00 00 00 1A 1B 1C 1D 1E
0050 1F 20 21 22 22 07 69 07 6F 07
0060 73 07 73 63 63 63 63 63 63 63
0070 63 63 63 70 70 70 71 71 71 72
0080 72 73 73 00 FF FD 16 AF 59 00
0090 00 00 00 00 00 00 00 00 00 00
0100 00 00 00 00 00 00 00 00 00 00
0110 00 00 00 80 52 00 52 54 84 2A
0120 1B 20 1B 25 20 20 08 08 7D 7F
0130 7A 7F 75 7F 6F 81 68 82 64 82
0140 61 83 5E 84 5B 84 57 83 55 83
0150 54 83 53 83 53 84 52 84 52 84
0160 52 84 52 84 52 84 52 84 52 84
0170 52 84 52 84 52 84 52 84 52 84
0180 52 84 52 84 52 84 52 84 77 73
0190 7E 94 71 6B 6E 88 62 81 5C 7C
0200 60 82 60 80 75 7D 72 85 5D 7D
0210 62 7F 5F 8A 61 72 5A 92 54 7E
0220 53 8B 57 9A 59 76 51 A5 57 7C
0230 4B 80 49 90 4E 8D 53 76 66 86
0240 60 7D 56 86 63 83 6A 7F 65 7F
0250 67 87 68 89 69 88 6D 88 6E 84
0260 6D 88 67 83 68 82 6C 84 66 7F
0270 69 81 68 7F 67 7D 67 7E 63 7F
0280 67 7A 69 7B 66 79 69 7D 6C 79
0290 65 7C 72 81 73 77 73 84 78 7A
0300 78 80 79 7F 79 80 79 7F 7B 82
0310 7B 80 7B 81 7B 82 7C 82 7A 82
0320 7B 80 7B 80 7C 7F 7C 7F 7B 7F
0330 7C 7E 7D 80 7E 80 7E 7F 7D 80
0340 7E 7F 7E 7F 7D 7F 7D 7F 7D 80
0350 7F 7F 7E 80 7E 7F 7F 7F 7F 7F
0360 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0370 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0380 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0390 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0400 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0410 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0420 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0430 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0440 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0450 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0460 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0470 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0480 7F 7F 7F 7F 7F 7F 7F 7F FF FF
0490 FF FF FF FF FF FF FF FF FF FF
0500 FF FF FF FF FF FF FF FF FF FF
0510 FF FF FF FF FF FF FF FF FF FF
0520 FF FF FF FF FF FF FF FF FF FF
0530 FF FF FF FF FF FF FF FF FF FF
0540 FF FF FF FF FF FF FF FF FF FF
0550 FF FF FF FF FF FF FF FF FF FF
0560 FF FF FF FF FF FF FF FF FF FF
0570 FF FF FF FF FF FF FF FF FF FF
```




0580	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0590	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0600	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0610	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0620	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0630	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0640	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0650	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0660	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0670	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0680	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0690	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0700	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0710	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0720	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0730	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0740	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0750	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0760	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0770	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0780	FF	FF	FF	FF	FF	FF	FF	FF	20	00
0790	22	00	24	05	00	22	00	38	00	00
0800	00	40	00	22	00	24	05	00	22	00
0810	38	00	00	00	00	00	00	00	01	00
0820	00	00	00	00	00	00	00	00	00	00
0830	00	00	00	00	00	00	00	00	00	00
0840	00	00	00	00	00	00	00	00	00	00
0850	00	00	00	00	00	00	00	00	00	00
0860	00	00	00	00	00	00	00	00	FF	FF
0870	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0880	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0890	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0900	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0910	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0920	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0930	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0940	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0950	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0960	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0970	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0980	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0990	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1000	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1040	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1050	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1080	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1090	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1100	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1110	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1120	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1130	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1140	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1150	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1160	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1170	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1180	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1190	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1200	FF									

DID \$32

```
0000 FF FF FF FF FF FF FF FF FF FF
0010 FF FF FF FF FF FF FF FF FF FF
0020 FF FF FF FF FF FF FF FF FF FF
0030 FF FF FF FF FF FF FF FF FF FF
0040 FF FF FF FF FF FF FF FF FF FF
0050 FF FF FF FF FF FF FF FF FF FF
0060 FF FF FF FF FF FF FF FF FF FF
0070 FF FF FF FF FF FF FF FF FF FF
0080 FF FF FF FF FF FF FF FF FF FF
0090 FF FF FF FF FF FF FF FF FF FF
0100 FF FF FF FF FF FF FF FF FF FF
0110 FF FF FF FF FF FF FF FF FF FF
0120 FF FF FF FF FF FF FF FF FF FF
0130 FF FF FF FF FF FF FF FF FF FF
0140 FF FF FF FF FF FF FF FF FF FF
0150 FF FF FF FF FF FF FF FF FF FF
0160 FF FF FF FF FF FF FF FF FF FF
0170 FF FF FF FF FF FF FF FF FF FF
0180 FF FF FF FF FF FF FF FF FF FF
0190 FF FF FF FF FF FF FF FF FF FF
0200 FF FF FF FF FF FF FF FF FF FF
0210 FF FF FF FF FF FF FF FF FF FF
0220 FF FF FF FF FF FF FF FF FF FF
0230 FF FF FF FF FF FF FF FF FF FF
0240 FF FF FF FF FF FF FF FF FF FF
0250 FF FF FF FF FF FF FF FF FF FF
0260 FF FF FF FF FF FF FF FF FF FF
0270 FF FF FF FF FF FF FF FF FF FF
0280 FF FF FF FF FF FF FF FF FF FF
0290 FF FF FF FF FF FF FF FF FF FF
0300 FF FF FF FF FF FF FF FF FF FF
0310 FF FF FF FF FF FF FF FF FF FF
0320 FF FF FF FF FF FF FF FF FF FF
0330 FF FF FF FF FF FF FF FF FF FF
0340 FF FF FF FF FF FF FF FF FF FF
0350 FF FF FF FF FF FF FF FF FF FF
0360 FF FF FF FF FF FF FF FF FF FF
0370 FF FF FF FF FF FF FF FF FF FF
0380 FF FF FF FF FF FF FF FF FF FF
0390 FF FF FF FF FF FF FF FF FF FF
0400 FF FF FF FF FF FF FF FF FF FF
0410 FF FF FF FF FF FF FF FF FF FF
0420 FF FF FF FF FF FF FF FF FF FF
0430 FF FF FF FF FF FF FF FF FF FF
0440 FF FF FF FF FF FF FF FF FF FF
0450 FF FF FF FF FF FF FF FF FF FF
0460 FF FF FF FF FF FF FF FF FF FF
0470 FF FF FF FF FF FF FF FF FF FF
0480 FF FF FF FF FF FF FF FF FF FF
0490 FF FF FF FF FF FF FF FF FF FF
0500 FF FF FF FF FF FF FF FF FF FF
0510 FF FF FF FF FF FF FF FF FF FF
0520 FF FF FF FF FF FF FF FF FF FF
0530 FF FF FF FF FF FF FF FF FF FF
0540 FF FF FF FF FF FF FF FF FF FF
0550 FF FF FF FF FF FF FF FF FF FF
0560 FF FF FF FF FF FF FF FF FF FF
0570 FF FF FF FF FF FF FF FF FF FF
0580 FF FF FF FF FF FF FF FF FF FF
0590 FF FF FF FF FF FF FF FF FF FF
0600 FF FF FF FF FF FF FF FF FF FF
0610 FF FF FF FF FF FF FF FF FF FF
0620 FF FF FF FF FF FF FF FF FF FF
0630 FF FF FF FF FF FF FF FF FF FF
```

0640 FF FF FF FF FF FF FF FF FF FF
0650 FF FF FF FF FF FF FF FF FF FF
0660 FF FF FF FF FF FF FF FF FF FF
0670 FF FF FF FF FF FF FF FF FF FF
0680 FF FF FF FF FF FF FF FF FF FF
0690 FF FF FF FF FF FF FF FF FF FF
0700 FF FF FF FF FF FF FF FF FF FF
0710 FF FF FF FF FF FF FF FF FF FF
0720 FF FF FF FF FF FF FF FF FF FF
0730 FF FF FF FF FF FF FF FF FF FF
0740 FF FF FF FF FF FF FF FF FF FF
0750 FF FF FF FF FF FF FF FF FF FF
0760 FF FF FF FF FF FF FF FF FF FF
0770 FF FF FF FF FF FF FF FF FF FF
0780 FF FF FF FF FF FF FF FF FF FF
0790 FF FF FF FF FF FF FF FF FF FF
0800 FF FF FF FF FF FF FF FF FF FF
0810 FF FF FF FF FF FF FF FF FF FF
0820 FF FF FF FF FF FF FF FF FF FF
0830 FF FF FF FF FF FF FF FF FF FF
0840 FF FF FF FF FF FF FF FF FF FF
0850 FF FF FF FF FF FF FF FF FF FF
0860 FF FF FF FF FF FF FF FF FF FF
0870 FF FF FF FF FF FF FF FF FF FF
0880 FF FF FF FF FF FF FF FF FF FF
0890 FF FF FF FF FF FF FF FF FF FF
0900 FF FF FF FF FF FF FF FF FF FF
0910 FF FF FF FF FF FF FF FF FF FF
0920 FF FF FF FF FF FF FF FF FF FF
0930 FF FF FF FF FF FF FF FF FF FF
0940 FF FF FF FF FF FF FF FF FF FF
0950 FF FF FF FF FF FF FF FF FF FF
0960 FF FF FF FF FF FF FF FF FF FF
0970 FF FF FF FF FF FF FF FF FF FF
0980 FF FF FF FF FF FF FF FF FF FF
0990 FF FF FF FF FF FF FF FF FF FF
1000 FF FF FF FF FF FF FF FF FF FF
1010 FF FF FF FF FF FF FF FF FF FF
1020 FF FF FF FF FF FF FF FF FF FF
1030 FF FF FF FF FF FF FF FF FF FF
1040 FF FF FF FF FF FF FF FF FF FF
1050 FF FF FF FF FF FF FF FF FF FF
1060 FF FF FF FF FF FF FF FF FF FF
1070 FF FF FF FF FF FF FF FF FF FF
1080 FF FF FF FF FF FF FF FF FF FF
1090 FF FF FF FF FF FF FF FF FF FF
1100 FF FF FF FF FF FF FF FF FF FF
1110 FF FF FF FF FF FF FF FF FF FF
1120 FF FF FF FF FF FF FF FF FF FF
1130 FF FF FF FF FF FF FF FF FF FF
1140 FF FF FF FF FF FF FF FF FF FF
1150 FF FF FF FF FF FF FF FF FF FF
1160 FF FF FF FF FF FF FF FF FF FF
1170 FF FF FF FF FF FF FF FF FF FF
1180 FF FF FF FF FF FF FF FF FF FF
1190 FF FF FF FF FF FF FF FF FF FF
1200 FF

DID §33

0000 FF FF FF FF FF FF FF FF FF FF
0010 FF FF FF FF FF FF FF FF FF FF
0020 FF FF FF FF FF FF FF FF FF FF
0030 FF FF FF FF FF FF FF FF FF FF
0040 FF FF FF FF FF FF FF FF FF FF

0050 FF FF FF FF FF FF FF FF FF FF
0060 FF FF FF FF FF FF FF FF FF FF
0070 FF FF FF FF FF FF FF FF FF FF
0080 FF FF FF FF FF FF FF FF FF FF
0090 FF FF FF FF FF FF FF FF FF FF
0100 FF FF FF FF FF FF FF FF FF FF
0110 FF FF FF FF FF FF FF FF FF FF
0120 FF FF FF FF FF FF FF FF FF FF
0130 FF FF FF FF FF FF FF FF FF FF
0140 FF FF FF FF FF FF FF FF FF FF
0150 FF FF FF FF FF FF FF FF FF FF
0160 FF FF FF FF FF FF FF FF FF FF
0170 FF FF FF FF FF FF FF FF FF FF
0180 FF FF FF FF FF FF FF FF FF FF
0190 FF FF FF FF FF FF FF FF FF FF
0200 FF FF FF FF FF FF FF FF FF FF
0210 FF FF FF FF FF FF FF FF FF FF
0220 FF FF FF FF FF FF FF FF FF FF
0230 FF FF FF FF FF FF FF FF FF FF
0240 FF FF FF FF FF FF FF FF FF FF
0250 FF FF FF FF FF FF FF FF FF FF
0260 FF FF FF FF FF FF FF FF FF FF
0270 FF FF FF FF FF FF FF FF FF FF
0280 FF FF FF FF FF FF FF FF FF FF
0290 FF FF FF FF FF FF FF FF FF FF
0300 FF FF FF FF FF FF FF FF FF FF
0310 FF FF FF FF FF FF FF FF FF FF
0320 FF FF FF FF FF FF FF FF FF FF
0330 FF FF FF FF FF FF FF FF FF FF
0340 FF FF FF FF FF FF FF FF FF FF
0350 FF FF FF FF FF FF FF FF FF FF
0360 FF FF FF FF FF FF FF FF FF FF
0370 FF FF FF FF FF FF FF FF FF FF
0380 FF FF FF FF FF FF FF FF FF FF
0390 FF FF FF FF FF FF FF FF FF FF
0400 FF FF FF FF FF FF FF FF FF FF
0410 FF FF FF FF FF FF FF FF FF FF
0420 FF FF FF FF FF FF FF FF FF FF
0430 FF FF FF FF FF FF FF FF FF FF
0440 FF FF FF FF FF FF FF FF FF FF
0450 FF FF FF FF FF FF FF FF FF FF
0460 FF FF FF FF FF FF FF FF FF FF
0470 FF FF FF FF FF FF FF FF FF FF
0480 FF FF FF FF FF FF FF FF FF FF
0490 FF FF FF FF FF FF FF FF FF FF
0500 FF FF FF FF FF FF FF FF FF FF
0510 FF FF FF FF FF FF FF FF FF FF
0520 FF FF FF FF FF FF FF FF FF FF
0530 FF FF FF FF FF FF FF FF FF FF
0540 FF FF FF FF FF FF FF FF FF FF
0550 FF FF FF FF FF FF FF FF FF FF
0560 FF FF FF FF FF FF FF FF FF FF
0570 FF FF FF FF FF FF FF FF FF FF
0580 FF FF FF FF FF FF FF FF FF FF
0590 FF FF FF FF FF FF FF FF FF FF
0600 FF FF FF FF FF FF FF FF FF FF
0610 FF FF FF FF FF FF FF FF FF FF
0620 FF FF FF FF FF FF FF FF FF FF
0630 FF FF FF FF FF FF FF FF FF FF
0640 FF FF FF FF FF FF FF FF FF FF
0650 FF FF FF FF FF FF FF FF FF FF
0660 FF FF FF FF FF FF FF FF FF FF
0670 FF FF FF FF FF FF FF FF FF FF
0680 FF FF FF FF FF FF FF FF FF FF
0690 FF FF FF FF FF FF FF FF FF FF


```
0700 FF FF FF FF FF FF FF FF FF FF
0710 FF FF FF FF FF FF FF FF FF FF
0720 FF FF FF FF FF FF FF FF FF FF
0730 FF FF FF FF FF FF FF FF FF FF
0740 FF FF FF FF FF FF FF FF FF FF
0750 FF FF FF FF FF FF FF FF FF FF
0760 FF FF FF FF FF FF FF FF FF FF
0770 FF FF FF FF FF FF FF FF FF FF
0780 FF FF FF FF FF FF FF FF FF FF
0790 FF FF FF FF FF FF FF FF FF FF
0800 FF FF FF FF FF FF FF FF FF FF
0810 FF FF FF FF FF FF FF FF FF FF
0820 FF FF FF FF FF FF FF FF FF FF
0830 FF FF FF FF FF FF FF FF FF FF
0840 FF FF FF FF FF FF FF FF FF FF
0850 FF FF FF FF FF FF FF FF FF FF
0860 FF FF FF FF FF FF FF FF FF FF
0870 FF FF FF FF FF FF FF FF FF FF
0880 FF FF FF FF FF FF FF FF FF FF
0890 FF FF FF FF FF FF FF FF FF FF
0900 FF FF FF FF FF FF FF FF FF FF
0910 FF FF FF FF FF FF FF FF FF FF
0920 FF FF FF FF FF FF FF FF FF FF
0930 FF FF FF FF FF FF FF FF FF FF
0940 FF FF FF FF FF FF FF FF FF FF
0950 FF FF FF FF FF FF FF FF FF FF
0960 FF FF FF FF FF FF FF FF FF FF
0970 FF FF FF FF FF FF FF FF FF FF
0980 FF FF FF FF FF FF FF FF FF FF
0990 FF FF FF FF FF FF FF FF FF FF
1000 FF FF FF FF FF FF FF FF FF FF
1010 FF FF FF FF FF FF FF FF FF FF
1020 FF FF FF FF FF FF FF FF FF FF
1030 FF FF FF FF FF FF FF FF FF FF
1040 FF FF FF FF FF FF FF FF FF FF
1050 FF FF FF FF FF FF FF FF FF FF
1060 FF FF FF FF FF FF FF FF FF FF
1070 FF FF FF FF FF FF FF FF FF FF
1080 FF FF FF FF FF FF FF FF FF FF
1090 FF FF FF FF FF FF FF FF FF FF
1100 FF FF FF FF FF FF FF FF FF FF
1110 FF FF FF FF FF FF FF FF FF FF
1120 FF FF FF FF FF FF FF FF FF FF
1130 FF FF FF FF FF FF FF FF FF FF
1140 FF FF FF FF FF FF FF FF FF FF
1150 FF FF FF FF FF FF FF FF FF FF
1160 FF FF FF FF FF FF FF FF FF FF
1170 FF FF FF FF FF FF FF FF FF FF
1180 FF FF FF FF FF FF FF FF FF FF
1190 FF FF FF FF FF FF FF FF FF FF
1200 FF
```

Disclaimer of Liability

The users of the CDR product and reviewers of the CDR reports and exported data shall ensure that data and information supplied is applicable to the vehicle, vehicle's system(s) and the vehicle ECU. Robert Bosch LLC and all its directors, officers, employees and members shall not be liable for damages arising out of or related to incorrect, incomplete or misinterpreted software and/or data. Robert Bosch LLC expressly excludes all liability for incidental, consequential, special or punitive damages arising from or related to the CDR data, CDR software or use thereof.