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	5FPYK2F52HB008732
User	NONE
Case Number	NONE
EDR Data Imaging Date	
Crash Date	
Filename	5FPYK2F52HB008732_ACM.CDRX
Saved on	Friday, June 30 2017 at 14:06:40
Imaged with CDR version	Crash Data Retrieval Tool 17.4
Imaged with Software Licensed to (Company Name)	Biomechanical Research and Testing
Reported with CDR version	Crash Data Retrieval Tool 17.4
Reported with Software Licensed to (Company Name)	Biomechanical Research and Testing
EDR Device Type	Airbag Control Module
Event(s) recovered	1

Comments

No comments entered.

Data Limitations

General Information:

These limitations are intended to assist you in reading the event data that has been imaged from the vehicle's SRS control unit. They contain general information and are not specific to this particular event. Event data should be considered in conjunction with other available physical evidence from the vehicle and scene.

Honda and Acura passenger vehicles designated as 2013 or later model year production are designed to be compatible with the Bosch CDR tool. Only some 2012 model year vehicles are compatible with the Bosch CDR tool.

Recorded Crash Events:

Data for front, side, rear and rollover events can be recorded as either non-deployment or deployment events. Both types of events can contain pre-crash and crash data.

- A non-deployment event is recorded if the change in longitudinal or lateral velocity equals or exceeds 8km/h over a 150ms timeframe or another type of non-reversible deployable restraint device other than a front, side, or side curtain airbag (e.g. seatbelt pretensioner) is commanded to deploy. Except as indicated below, non-deployment events are not locked into memory and can be over-written by subsequent non-deployment or deployment events.
- A deployment event is recorded if front airbag(s), side airbag(s), or side curtain airbag(s) are commanded to deploy. Deployment events are locked into memory and cannot be over-written.

The SRS control unit typically records only one event. Two events can be recorded if the T0 (time zero) values for each event occur within 5 seconds of each other. Therefore, a non-deployment event can be recorded and locked if it occurs within 5 seconds of a deployment event.

T0 is established by whichever of the following occurs first: (1) the change in longitudinal velocity at the SRS control unit equals or exceeds 0.8km/h over a 20ms timeframe; or (2) the change in lateral velocity at the SRS control unit equals or exceeds 0.8km/h over a 5ms timeframe; or (3) the occupant restraint control algorithm is activated; or (4) a commanded deployment of any type of non-reversible deployable restraint device (e.g. airbag or seatbelt pretensioner). If the time to deploy equals 0, then the command to deploy occurred at T0 or the device was not commanded to deploy during the event.

TEnd (end of event) is established by whichever of the following occurs first: (1) the change in longitudinal and lateral Delta V equals or falls below 0.8km/h over a 20ms timeframe; or (2) the occupant restraint control algorithm resets; or (3) time from T0 exceeds 300ms.

Data:

- Data recorded by the SRS control unit and imaged by the CDR tool is displayed relative to T0, not the time at which the vehicle made contact with another vehicle or object.
- Pre-crash data is recorded at 2 samples per second within the 5 seconds before T0. The sampling point at 0.0 is taken at T0 and is asynchronous with the other sample points. The time between -0.5 and 0.0 is not recorded and is between 1 and 500ms.
- Delta V data is recorded at 100 samples per second from T0 to 250ms or T0 to TEnd plus 30ms.
- Acceleration data is recorded at 100 samples per second from T0 to 250ms.
- Delta V, longitudinal reflects the change in velocity that the SRS control unit experienced in the longitudinal direction during the recorded portion of the event and is not the speed the vehicle was traveling before the event.
- Depending on the severity of the event and the accelerometer characteristics, saturation of the SRS control unit longitudinal or lateral accelerometers may occur, decreasing the recorded Delta V value.

- Time, accelerometer range exceeded is recorded if saturation of the SRS control unit longitudinal, lateral and/or normal (vertical) accelerometer occurs. The recorded data is the time at which the sensor range is first exceeded.
- The maximum recording capability of Deployment Command Data is 254ms or 255ms depending on vehicle model. A recorded value of 254ms or 255ms may indicate that the recording maximum was exceeded. In this case, the deployment command may have occurred between the recorded time and TEnd.
- Speed, vehicle indicated data is the speed indicated to the driver by the speedometer, not actual vehicle ground speed. Data accuracy can be affected by various factors, including but not limited to the following:
    - Significant changes in tire size from the factory setting
    - Wheel lockup or spin
    - Data latency or filtering and hysteresis within the speedometer module
- Accelerator pedal position, percent full is the ratio of accelerator pedal position compared to the fully depressed position.
- PCM (Powertrain Control Module) derived accelerator pedal position, percent full may differ from the accelerator pedal position, percent full under circumstances such as brake override activation or cruise control system engagement. These circumstances are based on vehicle equipment application and vary by model.
- Steering input angle is recorded in 5 degree increments.
- Side air bag suppression system status, right front passenger is recorded when the vehicle is equipped with the Occupant Position Detection System (OPDS).
- Occupant size classification, right front passenger airbag suppressed data is recorded as yes (suppressed) if the front passenger seat weight sensor system determined the passenger seat was empty or occupied by a child-size occupant.
- EV mode data records the vehicle powertrain status, not a driver selected operation mode. EV mode is recorded as On when the vehicle is moving and the internal combustion engine is not operating. EV mode may be recorded as On or Off when the vehicle is stopped.
- If power to the SRS control unit is lost during an event, all or part of the data may not be recorded.

Roll Rate Data:
- Vehicle roll rate data is recorded separately from the non-deployment and deployment events as described above. Therefore, the T0 for the roll rate data may differ from the T0 for the other data in this report.
- Roll rate recording trigger (T0) is established by whichever of the following occurs first: (1) a rollover algorithm ON judgment (SRS control unit decision to command deployment);, or (2) a change in relative roll angle at the SRS control unit equal to or exceeding 30 degrees (roll angle is not measured, but is calculated from the roll rate data); or (3) the rollover algorithm is activated.
- Once a recording trigger has been met, roll rate data is recorded for one rollover event at 10 samples per second from 1 second before to 2 seconds after T0. If a roll angle trigger is satisfied without a rollover algorithm ON judgment, the recorded roll rate data is unlocked and can be over-written by a subsequent rollover event. Roll rate data triggered by or recorded during a rollover algorithm ON judgment is locked into memory and cannot be over-written.
- If roll rate is detected at the SRS control unit during a non-deployment or deployment event but the recording trigger has not been satisfied, no roll rate data will be recorded. A graph of roll rate data will only be present in this report if roll rate data is recorded.

Data Element Sign Convention:
Except as noted below, all data is displayed in SAE J211 sign convention. The following table provides an explanation of the sign notation for data elements that may be included in this CDR report. All directional references to sign notation are from the perspective of the driver when seated in the vehicle facing the direction of forward vehicle travel.

Data element name	Positive sign indicates
Longitudinal Acceleration	Forward direction acceleration
Delta-V, Longitudinal	Forward direction acceleration
Lateral Acceleration	Left to right direction acceleration
Delta-V, Lateral	Left to right direction acceleration
Normal (Vertical) Acceleration	Downward direction acceleration
Vehicle Roll Rate*	See roll rate graph and data (if recorded)
Steering Input Angle*	Left Turn

*Not SAE J211 sign convention

Data Source:
All recorded data is measured and calculated within the SRS control unit except for the following parameters (if applicable) which are transmitted via the vehicle's communication network to the SRS control unit:
- Speed, vehicle indicated
- Accelerator pedal position, percent full
- Service brake
- ABS activity
- Stability control
- Steering input angle
- Engine RPM
- PCM derived accelerator pedal position, percent full
- EV mode
- Forward Collision Warning
- Collision Mitigation Braking System information
- Lane Keeping Assist System information
- Lane Departure Warning
- Road Departure Mitigation information
- Cruise Control status
- Adaptive Cruise Control status

Depending on vehicle feature content, capability, or conditions described above, the following items may not be recorded. If these items are not recorded, they will not be present in this document.
- EV mode

- Forward Collision Warning
- Collision Mitigation Braking System information
- Lane Keeping Assist System information
- Lane Departure Warning
- Road Departure Mitigation information
- Cruise Control status
- Adaptive Cruise Control status

Hexadecimal Data:
All data that has been specified for imaging is shown in the hexadecimal data section of this report. However, not all of this data is translated by the CDR tool. The SRS control unit may contain additional data that is not retrievable by the CDR tool.

Data Imaging:
If the SRS control unit is imaged outside of the vehicle, ensure that it is not moved, tilted or turned while connected to the CDR tool. Also, after imaging is complete, wait 3 minutes after removing the CDR tool before moving the SRS control unit. Not following this guideline could cause current non-deployment event data to be overwritten and a new event to be recorded. Current fault status could also be altered if the SRS control unit is imaged outside of the vehicle.

04002_HondaSRS_GEN2_r002

System Status at Retrieval

EDR Version	1.3.2.0

System Status at Event (Event Record 1)

Multi-Event, Number of Events (1, 2)	1
Complete File Recorded (Yes/No)	Yes
Ignition Cycle, Download	142
Maximum Delta-V, Longitudinal (MPH [km/h])	-28 [-45]
Time, Maximum Delta-V, Longitudinal (msec)	47.5
Maximum Delta-V, Lateral (MPH [km/h])	11 [18]
Time, Maximum Delta-V, Lateral (msec)	85.0
Time, Maximum Delta-V, Resultant (msec)	55.0
Time, Accelerometer Range Exceeded, Longitudinal (msec)	37.0
Time, Accelerometer Range Exceeded, Lateral (msec)	8.0
Time, Accelerometer Range Exceeded, Normal (msec)	0

Deployment Command Data (Event Record 1)

Pretensioner Deployment, Time to Fire, Driver (msec)	1
Pretensioner Deployment, Time to Fire, Right Front Passenger (msec)	1
Lap Pretensioner Deployment, Time to Fire, Driver (msec)	9
Lap Pretensioner Deployment, Time to Fire, Right Front Passenger (msec)	9
Frontal Air Bag Deployment, Time to Deploy First Stage, Driver (msec)	26
Frontal Air Bag Deployment, Time to Deploy First Stage, Right Front Passenger (msec)	2
Frontal Air Bag Deployment, Time to 2nd Stage, Driver (msec)	31
Frontal Air Bag Deployment, Time to 2nd Stage, Right Front Passenger (msec)	32
Side Air Bag Deployment, Time to Deploy, Driver (msec)	23
Side Air Bag Deployment, Time to Deploy, Right Front Passenger (msec)	0
Side Curtain/Tube Air Bag Deployment, Time to Deploy, Driver Side (msec)	23
Side Curtain/Tube Air Bag Deployment, Time to Deploy, Right Side (msec)	0
Frontal Air Bag Deployment, 2nd Stage Disposal, Driver (Yes/No)	No
Frontal Air Bag Deployment, 2nd Stage Disposal, Right Front Passenger (Yes/No)	No

Pre-Crash Data -1 sec (Event Record 1)

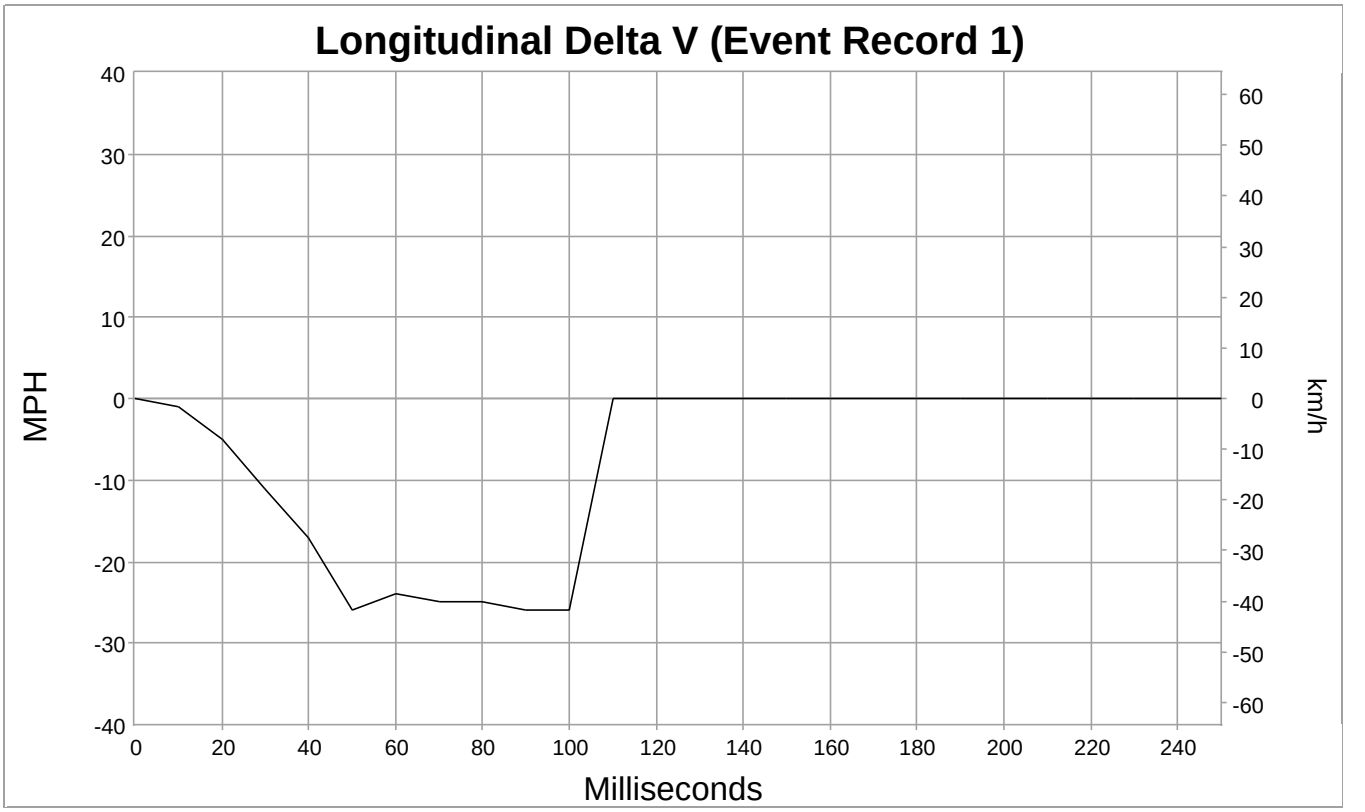
Safety Belt Status, Driver	On
Safety Belt Status, Right Front Passenger	On
Seat Track Position Switch, Foremost, Status, Driver	No
Occupant Size Classification, Right Front Passenger Airbag Suppressed (Yes/No)	No
Frontal Air Bag Warning Lamp (On, Off)	Off
Ignition Cycle, Crash	140

Pre-Crash Data -5 to 0 sec [2 samples/sec] (Event Record 1) - Table 1 of 2

Time Stamp (sec)	Speed, Vehicle Indicated (MPH [km/h])	Accelerator Pedal Position, % full	Service Brake (On, Off)	ABS Activity (On, Off)	Stability Control (On, Off, Engaged)	Steering Input (deg)	Engine RPM	PCM Derived Accelerator Pedal Position, % full
-5.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-4.5	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-4.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-3.5	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-3.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-2.5	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-2.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-1.5	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-1.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
-0.5	0 [0]	4	Off	Off	On Non-Engaged	0	0	4
0.0	0 [0]	4	Off	Off	On Non-Engaged	0	0	4

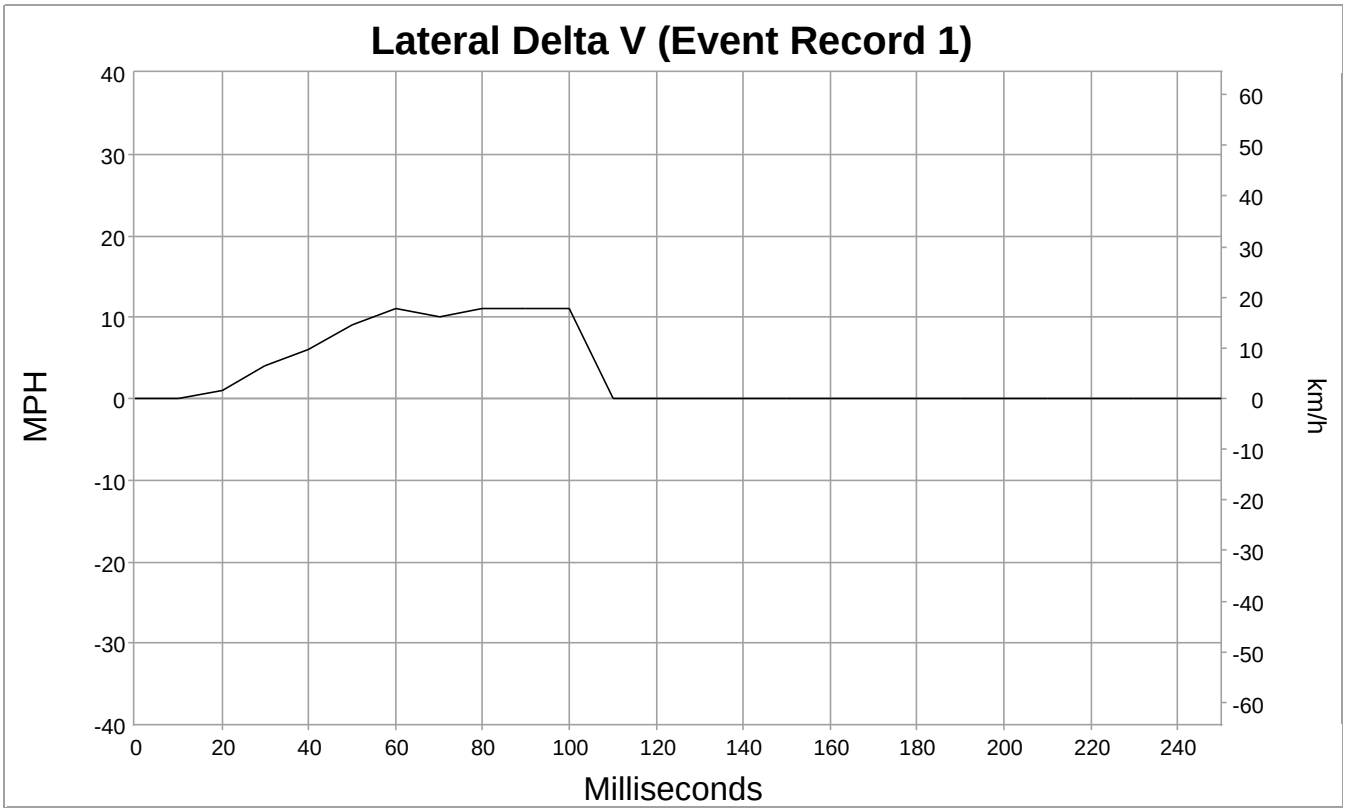
Pre-Crash Data -5 to 0 sec [2 samples/sec] (Event Record 1) - Table 2 of 2

Time Stamp (sec)	Cruise Control (Not Engaged/ Engaged)	Cruise Control (On/Off)
-5.0	Not Engaged	Off
-4.5	Not Engaged	Off
-4.0	Not Engaged	Off
-3.5	Not Engaged	Off
-3.0	Not Engaged	Off
-2.5	Not Engaged	Off
-2.0	Not Engaged	Off
-1.5	Not Engaged	Off
-1.0	Not Engaged	Off
-0.5	Not Engaged	Off
0.0	Not Engaged	Off



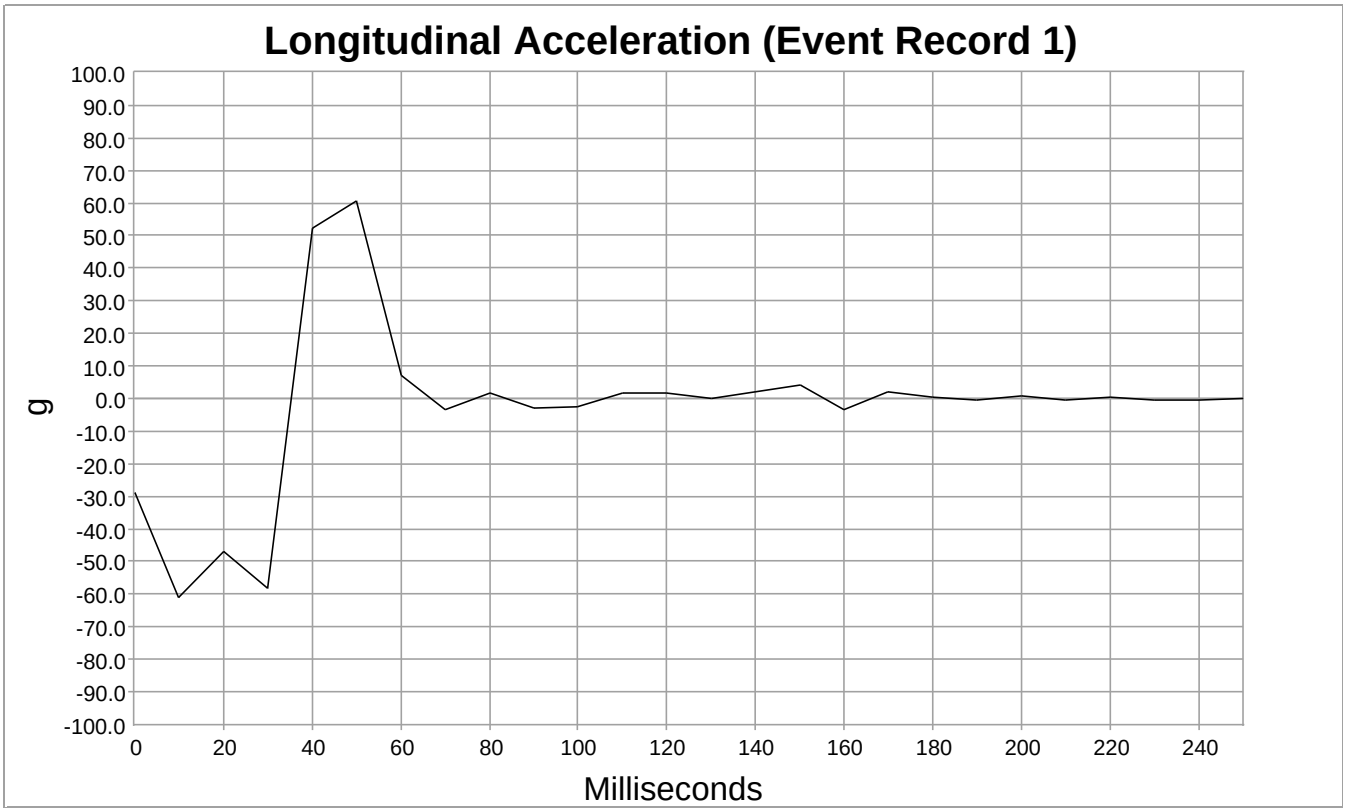
Longitudinal Delta V (Event Record 1)

Time (msec)	MPH [km/h]
0	0 [0]
10	-1 [-2]
20	-5 [-8]
30	-11 [-18]
40	-17 [-28]
50	-26 [-42]
60	-24 [-38]
70	-25 [-40]
80	-25 [-41]
90	-26 [-42]
100	-26 [-42]
110	0 [0]
120	0 [0]
130	0 [0]
140	0 [0]
150	0 [0]
160	0 [0]
170	0 [0]
180	0 [0]
190	0 [0]
200	0 [0]
210	0 [0]
220	0 [0]
230	0 [0]
240	0 [0]
250	0 [0]



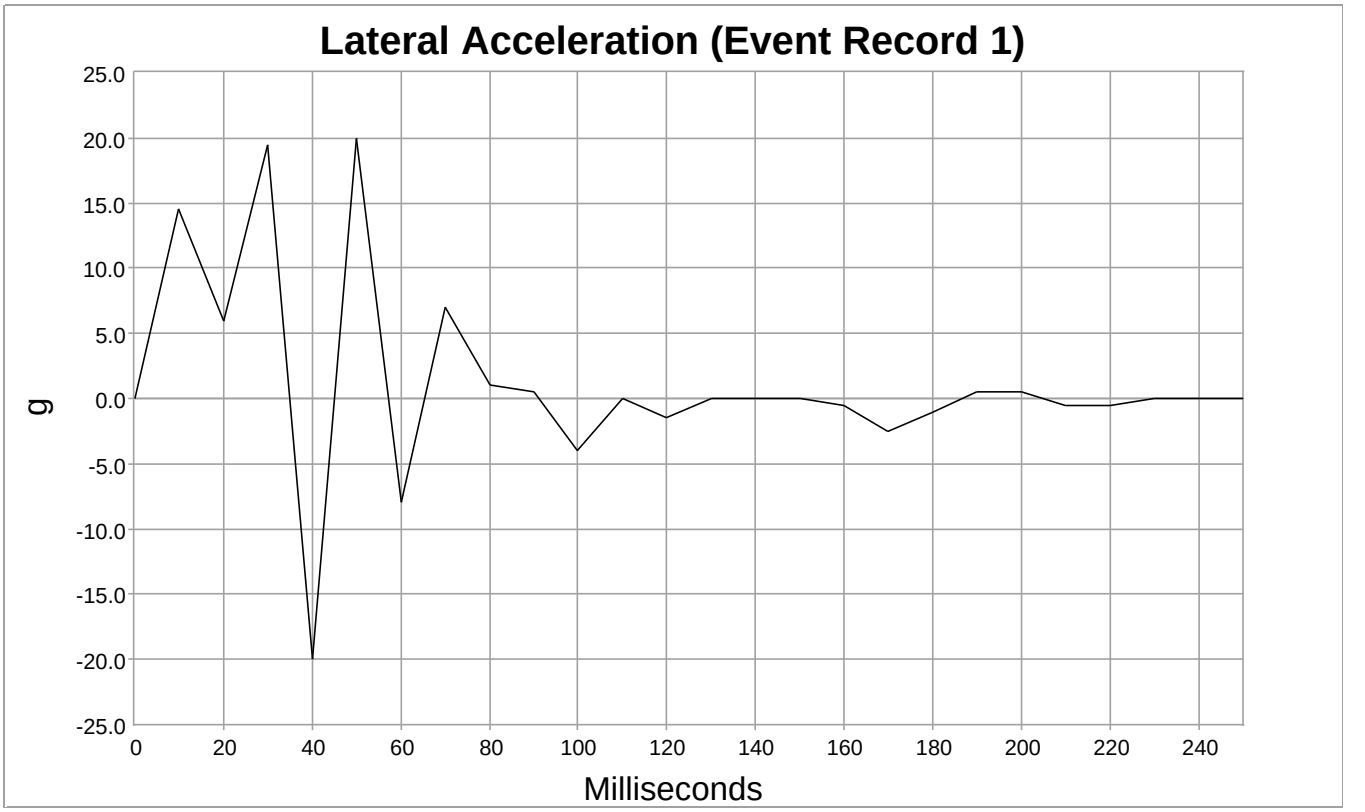
Lateral Delta V (Event Record 1)

Time (msec)	MPH [km/h]
0	0 [0]
10	0 [0]
20	1 [1]
30	4 [6]
40	6 [10]
50	9 [15]
60	11 [17]
70	10 [16]
80	11 [18]
90	11 [18]
100	11 [17]
110	0 [0]
120	0 [0]
130	0 [0]
140	0 [0]
150	0 [0]
160	0 [0]
170	0 [0]
180	0 [0]
190	0 [0]
200	0 [0]
210	0 [0]
220	0 [0]
230	0 [0]
240	0 [0]
250	0 [0]



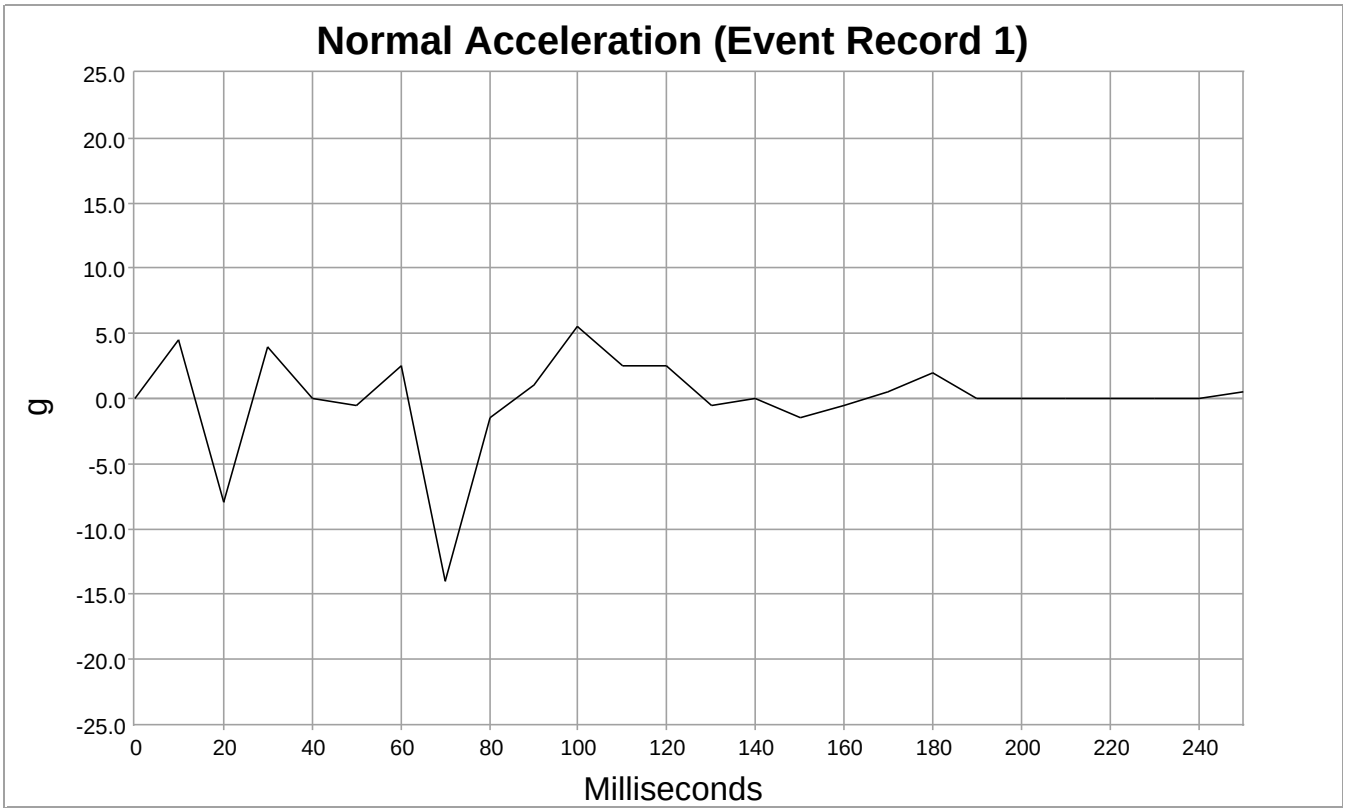
Longitudinal Acceleration (Event Record 1)

Time (msec)	g
0	-29.0
10	-61.0
20	-47.0
30	-58.0
40	52.5
50	60.5
60	7.0
70	-3.5
80	1.5
90	-3.0
100	-2.5
110	1.5
120	1.5
130	0.0
140	2.0
150	4.0
160	-3.5
170	2.0
180	0.5
190	-0.5
200	1.0
210	-0.5
220	0.5
230	-0.5
240	-0.5
250	0.0



Lateral Acceleration (Event Record 1)

Time (msec)	g
0	0.0
10	14.5
20	6.0
30	19.5
40	-20.0
50	20.0
60	-8.0
70	7.0
80	1.0
90	0.5
100	-4.0
110	0.0
120	-1.5
130	0.0
140	0.0
150	0.0
160	-0.5
170	-2.5
180	-1.0
190	0.5
200	0.5
210	-0.5
220	-0.5
230	0.0
240	0.0
250	0.0



Normal Acceleration (Event Record 1)

Time (msec)	g
0	0.0
10	4.5
20	-8.0
30	4.0
40	0.0
50	-0.5
60	2.5
70	-14.0
80	-1.5
90	1.0
100	5.5
110	2.5
120	2.5
130	-0.5
140	0.0
150	-1.5
160	-0.5
170	0.5
180	2.0
190	0.0
200	0.0
210	0.0
220	0.0
230	0.0
240	0.0
250	0.5

Hexadecimal Data

DID #	Data
$8000	21 47 14 15 01 33 00 55 00 55 00 00 11 33 80 00 20 0F 00 E9 02 05 00 00 00 00 00 00 00 00 00 00 11 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 8C
$8020	01 03 00 00 00 00 00 00 00 00 00 00 00 00 00 FC
$8021	AA 00 01 00 00 00 00 00 00 00 00 55 00 8E AA 00
$8022	AA 00 CC 78 66 00 00 00 01 01 00 00 09 09 00 00 00 1A 02 1F 20 00 00 00 00 17 00 00 00 17 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 FE
$8023	AA 00 CC 78 66 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 9B
$8024	AA 00 FF 00 00 40 43 03 12 02 11 00 00 8C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 20
$8025	AA 00 FF 00 00 40 43 00 12 00 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 B1
$8026	AA 01 FC 10 35 00 00 00 00 00 30 00 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 00 00 04 00 00 04 00 00 00 00 11 00 10 00 00 00 21
$8027	AA 01 FC 10 35 00 00 00 00 00 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 E4
$8028	AA 00 00 FE F8 EE E4 D6 DA D8 D7 D6 D6 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 D3 13 00 00 00 00 00 9D
$8029	AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 56
$802A	AA 00 00 00 01 06 0A 0F 11 10 12 12 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```
                00 00 00 00 00 00 00 00 12 22 00 16 00 00 00 96

$802B           AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 56

$802C           AA 01 C6 86 A2 8C 69 79 0E F9 03 FA FB 03 03 00
                04 08 F9 04 01 FF 02 FF 01 FF FF 00 01 72 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 78

$802D           AA 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55

$802E           AA 01 00 1D 0C 27 D8 28 F0 0E 02 01 F8 00 FD 00
                00 00 FF FB FE 01 01 FF FF 00 00 00 00 50 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 C7

$802F           AA 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55

$8030           AA 01 00 09 F0 08 00 FF 05 E4 FD 02 0B 05 05 FF
                00 FD FF 01 04 00 00 00 00 00 00 01 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 57

$8031           AA 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55

$8007           AA 00 00 00 00 00 00 00 0E 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 F2

$803F           AA 01 00 31 80 80 00 00 00 00 00 00 00 00 00 00
                84 03 07 00 00 00 00 00 00 00 00 00 28 04 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8011           AA 01 C4 2F E0 00 00 00 00 01 27 27 00 00 00 12
                00 00 00 00 04 00 13 1B 4D C0 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 E2

$8012           AA 00 55 0C 3A 04 20 0D 77 03 0C 00 20 35 CC 03
                00 09 0E B0 00 16 01 05 60 00 08 01 05 60 00 08
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 27
                20 11 00 14 10 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 AB

$8013           AA 01 C4 2F E0 00 00 00 00 01 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 81

$8014           AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 56
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8015           AA 01 C4 2F E0 00 00 00 00 01 27 27 00 00 00 12
                00 00 00 00 07 00 13 1B 4D C0 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 DF

$8016           AA 00 03 41 03 A7 07 95 04 12 03 1C F9 FC 04 EF
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 AF
```

```
$8017          AA 01 C4 2F E0 00 00 00 00 01 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 81

$8018          AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 56

$8019          AA 01 C4 2F E3 10 BF 80 00 01 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 2F

$801A          AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$801B          AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8001          AA 00 C4 18 00 00 00 00 36 36 00 00 00 32 00 00
               00 00 00 06 07 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00

$8002          AA 01 E0 FE F8 00 00 00 02 80 20 00 00 00 00 00
               00 3C D3 00 12 00 0E 00 00 00 00 06 03 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00

$8004          Not Used

$8005          AA 00 FE FF FF FF DE F1 DE F1 80 00 00 00 00 00
               00 00 00 DC 00 00 00 00 00 00 00 00 00 00 00 00
               E2 5F E2 5F E2 5F E2 5F 00 00 00 00 00 00 00 00
               FF D0 00 FE F8 01 15 00 01 7B FE 47 00 00 00 64
               11 6A 00 03 CE 04 19 00 05 38 04 4A 00 00 00 0C
               01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8008          Not Used

$8009          AA 01 B0 08 AA AA AA AA 00 00 00 00 00 00 00 00
               00 00 00 00

$800A          AA 00 00 31 00 00 42 86 93 19 99 42 76 9A 94 79
               42 76 9A 94 A7 42 86 93 19 9E 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8010          AA 00 F8 F8 F8 F8 E0 E0 E0 E3 00 00 00 00 00 00
               AF C0 11 A1 05 00 00 00 AF C0 01 21 05 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               AF 99 11 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
               00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

$801C	AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 56
$801F	Not Used
$8040	AA 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8041	AA 00 FF CC 00 00 00 00 57 57 57 57 57 57 55 55 55 55 00 00 55 55 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8043	AA 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8044	AA 00 BC 00 80 00 80 81 81 6E 00 00 00 00 00 00 00 00 00 00
$8045	AA 00 B4 00 79 00 77 5B 00 00 00 00 00 00 00 00 00 00 00 00
$8046	AA 00 C0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8050	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 FF 18 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8051	B3 21 01 00 B2 21 01 00 B4 21 01 00 83 11 01 00 A6 11 01 00 A1 11 01 00 A2 11 01 00 00 00 00 00
$8052	03 33 17 17 03 01 01 01 01 00 00 00 00 00 00 00
$8053	A4 A8 A4 00 00 00 00 00 00 00 00 00 00 00 00 00
$8054	AA 00 E2 5F 28 E9 E2 5F 28 E9 E2 5F 28 E9 E2 5F 28 E9 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8060	AA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8061	AA 00 CF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
$8062	AA 01 FF F0 FF FC 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8063           AA 00 FF C0 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8064           AA 00 F0 32 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8065           AA 00 FF FF F0 CC 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

```
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8070         00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8071         00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$8072         00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$E600         2F 6A

$E604         01 00 00 00

$F100         00 00 00 00

$F110         0E 37 37 39 36 30 54 36 5A 41 30 33 30 4D 32 00
              00

$F112         0B 43 31 42 5A 30 31 34 44 4C 33 46 00 00 00 00
              00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

$F181         37 37 39 35 39 2D 54 36 5A 2D 41 30 32 30 00 00
```

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.