



VEHICLE FACTORS GROUP

FACTUAL REPORT ATTACHMENT

2016 Ford Fusion – Event data recorder image

North Las Vegas, NV

HWY22FH004

(21 pages)

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	3FA6P0PU2GR [REDACTED]
User	[REDACTED]
Case Number	2201290001725
EDR Data Imaging Date	02/01/2022
Crash Date	01/29/2022
Filename	3FA6P0PU2GR [REDACTED].ACM.CDRX
Saved on	Tuesday, February 1 2022 at 10:06:13
Imaged with CDR version	Crash Data Retrieval Tool 21.4
Imaged with Software Licensed to (Company Name)	North Las Vegas Police Department
Reported with CDR version	Crash Data Retrieval Tool 21.4
Reported with Software Licensed to (Company Name)	North Las Vegas Police Department
EDR Device Type	Airbag Control Module
ACM Adapter Detected During Download	No
Event(s) recovered	locked frontal event

Comments

v3 eb 1tl

The retrieval of this data has been authorized by the vehicle's owner, or other legal authority such as a court order or search warrant, as indicated by the CDR tool user on Tuesday, February 1 2022 at 10:06:13.

Data Limitations

Data Imaging:

CAUTION: When imaging data directly from the RCM on a bench top, make sure the RCM is placed on a flat surface without any movement (static) while connected to and powered by the CDR interface. Not following the above guideline for bench top imaging could risk inducing new events to be recorded in the RCM and possibly overwriting a Non airbag deployment.

Note that the RCM Adapter Detected during Download parameter equal to "Yes" indicates that the EDR data was collected directly from the RCM. When equal to "No", it indicates that the EDR data was collected through the OBD II from the vehicle.

Restraints Control Module (RCM) Recorded Crash Event(s):

The RCM can store up to two crash events. Event types are categorized as follow:

1. Non deployment trigger event is an event in which EDR recording trigger threshold is met or exceeded (minimum of 5 mph (8kph) Accumulated Delta Velocity within 150ms interval), but no device(s) have deployed. The data from such event can be overwritten by subsequent events.
2. Airbag deployment event is an event in which frontal, side or curtain airbags have deployed. Note that such event cannot be overwritten or cleared from the Restraints Control Module (RCM). Once the RCM has deployed any airbag device(s), the RCM must be replaced.
3. Some RCM may also categorize Non airbag deployment event. This type is an event in which non airbag devices such as pretensioners, knee bolster etc... have deployed. Note that such event can be overwritten given a subsequent "deployment" event.

"Time zero" or Event Beginning of any event (First Record or Second Record) is defined as the first Algorithm wake up during that event. So all the Pre-Crash, At Event, Delta V Data, deployment times etc... are relative to "Time zero".

It is possible that conditions in a crash may result in an incomplete event data record.

EDR Data Elements Overview/Interpretation in CDR Report:

Under CDR File Information Section

- Event(s) recovered indicates if an event was detected and recorded by RCM. If no event is detected, it will indicate "none". If a trigger or non airbag deployment event is detected, it will indicate "unlocked event". If an airbag deployment is detected, it will indicate "locked frontal event", or "locked side event", or "locked rollover event".

Under System Status at Event Section

- Complete file recorded indicates if data from the recorded event has been fully written to the RCM memory.
- If the RCM detected a peripheral crash sensor was lost during an event, the crash sensor would be identified as well as the time it was lost during that event relative to Time zero. If no loss of a peripheral crash sensor, nothing would be displayed. Note in some vehicles, loss of a peripheral crash sensor may lead to the loss of another peripheral crash sensor due to shared communication.

Under Deployment Data Section

- If the RCM commanded a deployment during an event, the deployment device(s) would be identified as well as the time the RCM commanded its deployment relative to Time zero. If no device was commanded to deploy by the RCM, nothing (no deployment device(s)) would be displayed.

Under Pre-Crash Data -5 to 0 sec

- Steering Wheel Angle if Applicable: positive value indicates left turn, and negative value would indicate right turn.
- Stability Control Lateral Acceleration if Applicable: Lateral Acceleration (Y-direction) is the acceleration along the lateral axis of the vehicle, reported as positive when accelerating to the left.
- Stability Control Longitudinal Acceleration if Applicable: Longitudinal Acceleration (X-direction) is the acceleration along the longitudinal axis of the vehicle, reported as positive when accelerating in a forward direction.
- Stability Control Yaw Rate if Applicable: The Yaw Axis is the vertical axis of the vehicle, generally perpendicular to the plane of the road. A positive Yaw Rate is counter-clockwise when observing the vehicle from above.
- Stability Control Roll Rate if Applicable: The Roll Axis is the longitudinal axis of the vehicle, generally aligned with the primary axis of motion of the vehicle. A positive Roll Rate is counter-clockwise when observing the vehicle from the front.

Under Longitudinal Crash Pulse

- Delta-V, longitudinal: SAE J211 sign convention, negative value generally indicates a front crash and positive value generally indicates a rear crash. Longitudinal delta-V reflects the change in forward velocity that the sensing system experienced from Time zero. It is not the speed the vehicle was traveling before the event. Note that the vehicle speed is recorded separately. This data should be examined in conjunction with other available physical evidence from the vehicle and scene when assessing occupant or vehicle longitudinal delta-V.

Under Lateral Crash Pulse

- Delta-V, lateral: SAE J211 sign convention, Positive value generally indicates a driver side crash and negative value generally indicates a passenger side crash.

Under Rollover Sensor Data (if Applicable)

- Vehicle roll angle if applicable: The Roll Axis is the longitudinal axis of the vehicle, generally aligned with the primary axis of motion of the vehicle. A positive Roll Angle is counter-clockwise when observing the vehicle from the front.

Data Sources:

The Restraints Control Module (RCM) contains all recorded data on any event. Data collected from the RCM comes from multiple sources:

1. Internal to the RCM such as internal sensors for delta Velocity data, rollover angle data if applicable, etc... which are measured, calculated and stored internally.
2. External to the RCM but with a direct connection such as buckle switches, peripheral crash sensors, seat track switch(s) etc... which are measured, calculated and stored internally.
3. External Modules to the RCM such as Powertrain Control Module, Brake Control Module, etc... These modules communicate to the RCM via Vehicle Communication Network. The RCM stores the received data internally.

02011_RCM-AB10P_r001

System Status at Time of Retrieval

VIN As Programmed into RCM at Factory	3FA6P0PU2GR [REDACTED]
Current VIN from PCM	3FA6P0PU2GR [REDACTED]
Ignition Cycle, Download (First Record)	9,470
Ignition Cycle, Download (Second Record)	N/A
Restraints Control Module Part Number	ES7T-14B321-AA
Restraints Control Module Serial Number	002459874248
Restraints Control Module Software Part Number (Version)	DS7T-14C028-CA
Restraints Control Module Calibration Part Number (Version)	ES7T-14C098-JA
Software Strategy Part Number (2)	N/A
Driver Side/Center Frontal Restraints Sensor Serial Number	B71C8B541914
Driver, Row 1, Side Restraint Sensor 1 Serial Number	B51CE855342F
Driver, Row 2, Side Restraint Sensor 2 Serial Number	A91CB5A44D07
Passenger Frontal Restraints Sensor Serial Number	A91CB5A4180C
Passenger, Row 1, Side Restraint Sensor 1 Serial Number	AF1CE3710A2B
Passenger, Row 2, Side Restraint Sensor 2 Serial Number	B31CBFF43E3C
Steering Wheel Location	Left Hand Drive

System Status at Event (First Record)

Complete File Recorded (Yes,No)	Yes
Multi-Event, Number of Events	1
Time From Event 1 to 2 (msec)	N/A
Lifetime Operating Timer at Event Time Zero (sec)	12,190,592
Key-On Timer at Event Time Zero (sec)	496
Vehicle Voltage at Time Zero (V)	14.78
Energy Reserve Mode Entered During Event (Yes, No)	No
Time Front Passenger Restraint Sensor Lost Relative to Time Zero (msec)	7

Faults Present at Start of Event (First Record)

No Faults Recorded

Deployment Data (First Record)

Frontal Airbag Deployment, Time to First Stage Deployment, Driver (msec)	29.5
Frontal Airbag Deployment, Time to 2nd Stage, Driver (msec)	34.5
Pretensioner (Retractor) Deployment, Time to Fire, Driver (msec)	20.5
Side Curtain Airbag Deployment, Time to Deploy, Passenger Right Side (msec)	29.5
Adaptive Steering Column Deployment, Time to Deploy, Driver (msec)	29.5
Inflatable Knee Bolster Deployment, Time to Fire, Driver (msec)	20.5
Pretensioner (Anchor) Deployment, Time to Fire, Driver (msec)	25.5
Maximum Delta-V, Longitudinal (MPH [km/h])	-28.6 [-46]
Time, Maximum Delta-V Longitudinal (msec)	180
Passenger Row 1, Side Sensor, Discriminating Deployment	Yes
RCM, Side Driver (Lateral), Safing	Yes
RCM Side Passenger (Lateral), Safing	Yes
Driver or Center, Front Satellite Sensor, Safing	Yes
Passenger, Front Satellite Sensor, Safing	Yes
RCM Front (Longitudinal), Discriminating Deployment	Yes
RCM Front(Longitudinal), Safing	Yes

Pre-Crash Data -1 sec (First Record)

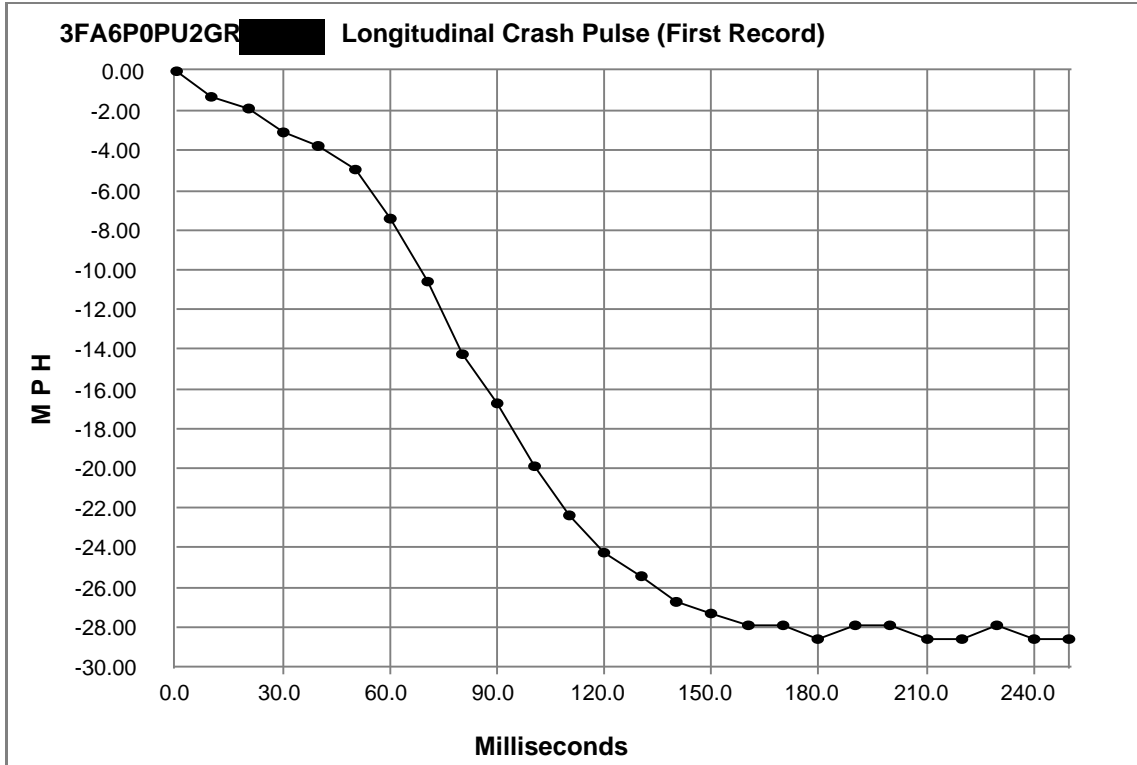
Ignition cycle, Crash	9,468
Frontal Air Bag Warning Lamp, On/Off	Off
Occupant Size Classification, Front Passenger (Child size Yes/No [Hex value])	No [\$00]
Safety Belt Status, Driver	Buckled
Seat Track Position Switch, Foremost, Status, Driver	Not Forward
Seat Track Position Switch, Foremost, Status, Front Passenger	Not Forward
Safety Belt Status, Front Passenger	Unbuckled
Brake Telltale	Off
ABS Telltale	Off
ESC/TC Telltale	Off
ESC/TC Off Telltale	Off
Speed Control Telltale	Off
Powertrain Wrench Telltale	Off
Powertrain Malfunction Indicator Lamp (MIL) Telltale	Off

Pre-Crash Data -5 to 0 sec [2 samples/sec] (First Record)

Time (sec)	Speed, Vehicle Indicated (MPH [km/h])	Speed, Vehicle Indicated, Quality Factor	Accelerator Pedal, % Full	Accelerator Pedal, % Full, Quality Factor	Service Brake, On/Off	Service brake, Quality Factor	Engine RPM	ABS Activity (Engaged, Non-Engaged)	Brake Powertrain Torque Request	Traction Control via Brakes	Wheel Torque (N-m)	Driver Gear Select (Auto Trans)
- 5.0	68.7 [110.6]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-356	Drive
- 4.5	67.8 [109.1]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-392	Drive
- 4.0	67.0 [107.8]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-408	Drive
- 3.5	66.1 [106.3]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-284	Drive
- 3.0	65.2 [105.0]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-368	Drive
- 2.5	64.2 [103.4]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-380	Drive
- 2.0	63.5 [102.3]	OK	0.0	OK	On	OK	0	non-engaged	No	Inactive	-204	Drive
- 1.5	63.0 [101.4]	OK	0.0	OK	Off	OK	0	non-engaged	No	Inactive	-100	Drive
- 1.0	62.7 [100.9]	OK	11.1	OK	Off	OK	0	non-engaged	No	Inactive	-80	Drive
- 0.5	62.4 [100.5]	OK	21.4	OK	Off	OK	0	non-engaged	No	Inactive	44	Drive
0.0	62.4 [100.5]	OK	23.4	OK	Off	OK	0	non-engaged	No	Inactive	108	Drive

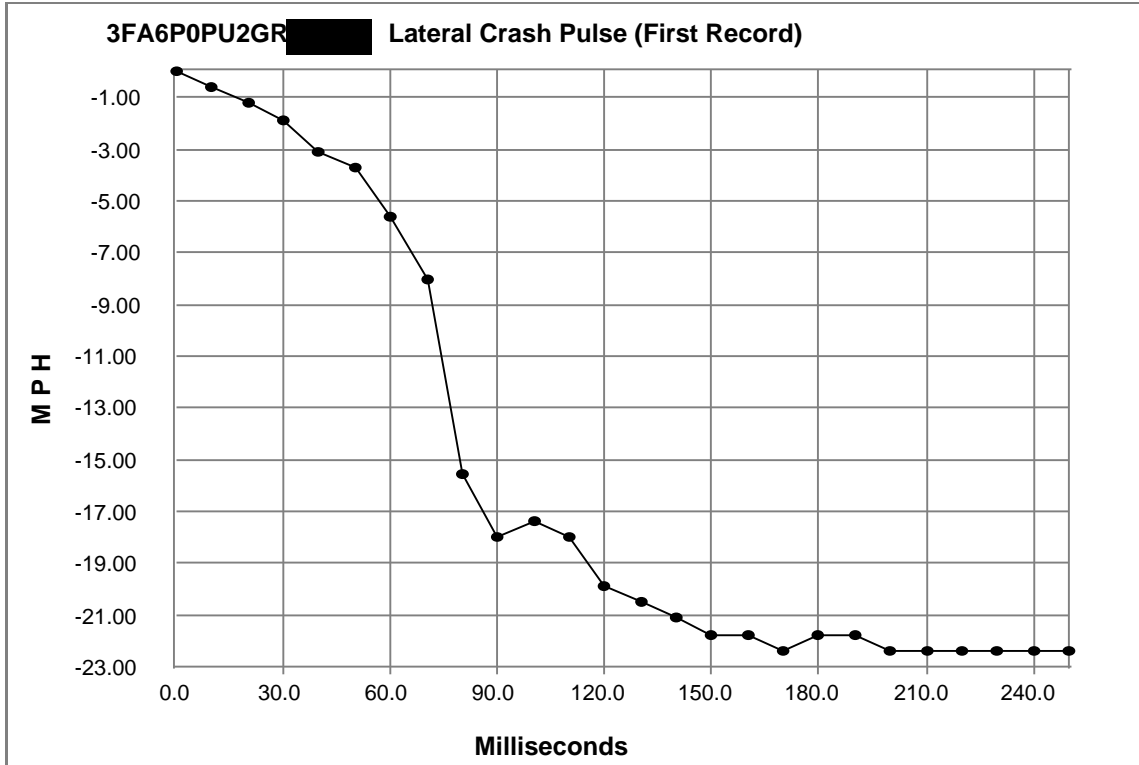
Pre-Crash Data -5 to 0 sec [10 samples/sec] (First Record)

Time (sec)	Stability Control Lateral Acceleration (g)	Stability Control Longitudinal Acceleration (g)	Stability Control Yaw Rate (deg/sec)	Stability Control Roll Rate (deg/sec)	Steering Wheel Angle (deg)
- 5.0	-0.01	0.05	-0.09	0.00	0.0
- 4.9	-0.01	0.06	-0.14	0.00	0.0
- 4.8	-0.01	0.06	-0.14	0.00	0.0
- 4.7	0.02	0.06	-0.19	0.00	0.0
- 4.6	0.01	0.07	0.02	0.00	0.0
- 4.5	-0.01	0.08	-0.36	0.00	0.0
- 4.4	-0.01	0.07	-0.46	0.00	-0.1
- 4.3	-0.01	0.07	-0.33	0.00	0.0
- 4.2	-0.01	0.06	-0.33	0.00	0.0
- 4.1	0.00	0.07	-0.22	0.00	0.0
- 4.0	0.01	0.05	-0.18	0.00	0.0
- 3.9	-0.03	0.06	-0.72	0.00	0.1
- 3.8	0.05	0.10	-0.38	0.00	0.1
- 3.7	0.03	0.07	-0.13	0.00	0.3
- 3.6	-0.01	0.07	-0.12	0.00	0.1
- 3.5	-0.01	0.04	-0.32	0.00	0.0
- 3.4	-0.01	0.07	-0.42	0.00	-0.3
- 3.3	-0.01	0.05	-0.53	0.00	-0.3
- 3.2	0.00	0.06	-0.47	0.00	-0.3
- 3.1	0.00	0.05	-0.30	0.00	0.0
- 3.0	0.01	0.06	-0.30	0.00	0.0
- 2.9	0.00	0.06	-0.26	0.00	0.1
- 2.8	-0.01	0.07	-0.25	0.00	0.0
- 2.7	-0.01	0.07	-0.14	0.00	0.0
- 2.6	-0.01	0.07	-0.32	0.00	0.0
- 2.5	-0.01	0.07	-0.40	0.00	0.0
- 2.4	0.00	0.06	-0.27	0.00	0.0
- 2.3	0.00	0.08	-0.25	0.00	0.0
- 2.2	-0.01	0.06	0.01	0.00	0.0
- 2.1	-0.01	0.04	-0.03	0.00	0.0
- 2.0	-0.01	0.05	-0.34	0.00	0.0
- 1.9	-0.01	0.04	-0.50	0.00	-0.1
- 1.8	0.00	0.05	-0.43	0.00	-0.1
- 1.7	0.01	0.03	-0.50	0.00	-0.3
- 1.6	0.01	0.04	-0.45	0.00	-0.4
- 1.5	0.00	0.04	-0.71	0.00	-0.7
- 1.4	0.01	0.03	-0.96	0.00	-0.4
- 1.3	0.04	0.04	-0.64	0.00	-0.9
- 1.2	0.03	0.03	-0.84	0.00	-1.7
- 1.1	0.02	0.03	-1.45	0.00	-1.8
- 1.0	0.04	0.04	-1.24	0.00	-1.6
- 0.9	0.03	0.02	-1.01	0.00	-1.4
- 0.8	0.02	0.03	-0.87	0.00	-1.2
- 0.7	0.01	0.03	-0.76	0.00	-0.7
- 0.6	0.01	0.02	-0.74	0.00	-0.7
- 0.5	0.01	0.03	-0.84	0.00	-0.7
- 0.4	0.01	0.02	-0.66	0.00	-0.6
- 0.3	0.01	0.01	-0.64	0.00	-1.0
- 0.2	0.00	0.03	-1.26	0.00	-1.8
- 0.1	0.00	0.00	-1.04	0.00	-3.1
0.0	0.00	0.01	-1.05	0.00	-3.4



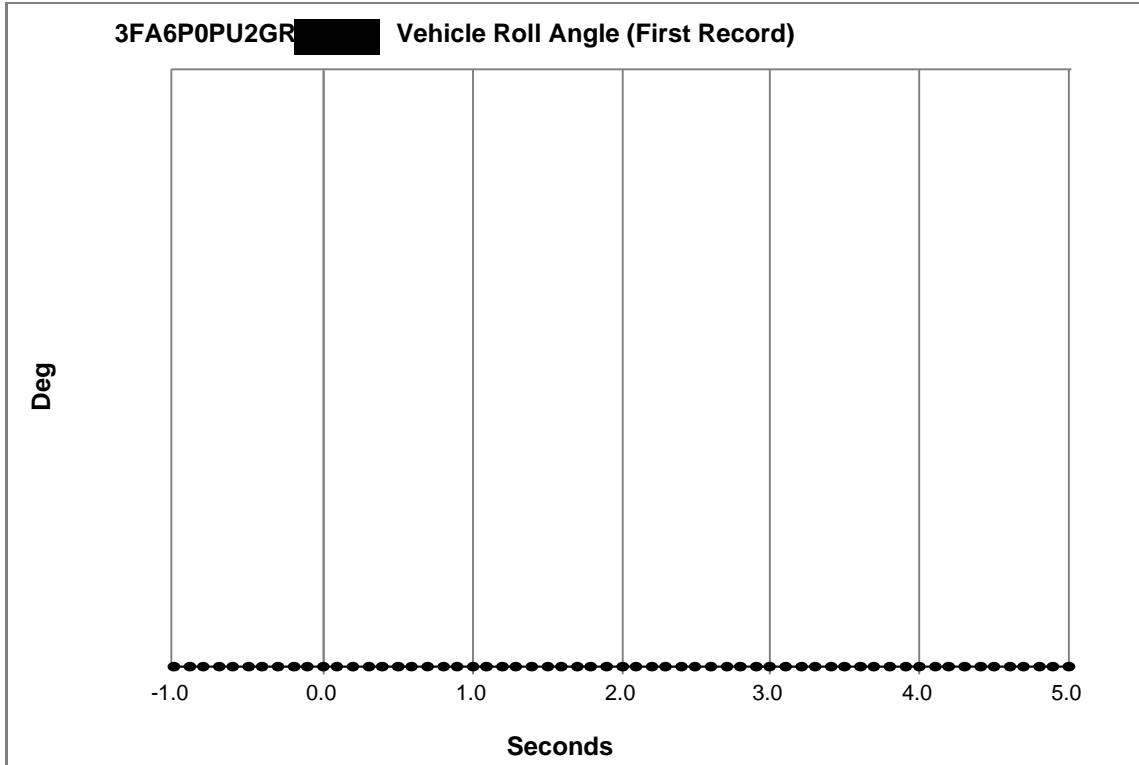
Longitudinal Crash Pulse (First Record)

Time (msec)	Delta-V, longitudinal (MPH)	Delta-V, longitudinal (km/h)
0	0.0	0
10	-1.2	-2
20	-1.9	-3
30	-3.1	-5
40	-3.7	-6
50	-5.0	-8
60	-7.5	-12
70	-10.6	-17
80	-14.3	-23
90	-16.8	-27
100	-19.9	-32
110	-22.4	-36
120	-24.2	-39
130	-25.5	-41
140	-26.7	-43
150	-27.3	-44
160	-28.0	-45
170	-28.0	-45
180	-28.6	-46
190	-28.0	-45
200	-28.0	-45
210	-28.6	-46
220	-28.6	-46
230	-28.0	-45
240	-28.6	-46
250	-28.6	-46



Lateral Crash Pulse (First Record)

Time (msec)	Delta-V, lateral (MPH)	Delta-V, lateral (km/h)
0	0.0	0
10	-0.6	-1
20	-1.2	-2
30	-1.9	-3
40	-3.1	-5
50	-3.7	-6
60	-5.6	-9
70	-8.1	-13
80	-15.5	-25
90	-18.0	-29
100	-17.4	-28
110	-18.0	-29
120	-19.9	-32
130	-20.5	-33
140	-21.1	-34
150	-21.7	-35
160	-21.7	-35
170	-22.4	-36
180	-21.7	-35
190	-21.7	-35
200	-22.4	-36
210	-22.4	-36
220	-22.4	-36
230	-22.4	-36
240	-22.4	-36
250	-22.4	-36



Vehicle Roll Angle (First Record)

Time (sec)	Vehicle Roll Angle (deg)
-1.0	0.0
-0.9	0.0
-0.8	0.0
-0.7	0.0
-0.6	0.0
-0.5	0.0
-0.4	0.0
-0.3	0.0
-0.2	0.0
-0.1	0.0
0.0	0.0
0.1	0.0
0.2	0.0
0.3	0.0
0.4	0.0
0.5	0.0
0.6	0.0
0.7	0.0
0.8	0.0
0.9	0.0
1.0	0.0
1.1	0.0
1.2	0.0
1.3	0.0
1.4	0.0
1.5	0.0
1.6	0.0
1.7	0.0
1.8	0.0

1.9	0.0
2.0	0.0
2.1	0.0
2.2	0.0
2.3	0.0
2.4	0.0
2.5	0.0
2.6	0.0
2.7	0.0
2.8	0.0
2.9	0.0
3.0	0.0
3.1	0.0
3.2	0.0
3.3	0.0
3.4	0.0
3.5	0.0
3.6	0.0
3.7	0.0
3.8	0.0
3.9	0.0
4.0	0.0
4.1	0.0
4.2	0.0
4.3	0.0
4.4	0.0
4.5	0.0
4.6	0.0
4.7	0.0
4.8	0.0
4.9	0.0
5.0	0.0

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 system.

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45 53 37 54 2D 31 34 42 33 32 31 2D 41 41 00 00 00 00 00 00 00 00 00 00

30 30 32 34 35 39 38 37 34 32 34 38 00 00 00 00

44 53 37 54 2D 31 34 43 30 32 38 2D 43 41 00 00 00 00 00 00 00 00 00 00

42 37 31 43 38 42 35 34 31 39 31 34 00 00 00 00

42 35 31 43 45 38 35 35 33 34 32 46 00 00 00 00

41 39 31 43 42 35 41 34 34 44 30 37 00 00 00 00

41 39 31 43 42 35 41 34 31 38 30 43 00 00 00 00

41 46 31 43 45 33 37 31 30 41 32 42 00 00 00 00

42 33 31 43 42 46 46 34 33 45 33 43 00 00 00 00

33 46 41 36 50 30 50 55 32 47 52 32 34 30 31 36 34

33 46 41 36 50 30 50 55 32 47 52 32 34 30 31 36 34 00 00 00 00 00 00 00

C7 68 CF 3B 10 0C 76 00

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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.