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Subject: ODI-11494675
Date: Monday, November 28, 2022 2:21:32 PM
Attachments: [REDACTED]

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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	W1K3G4EB2M
User	DCC
Case Number	
EDR Data Imaging Date	11/21/2022
Crash Date	11/13/2022
Filename	
Saved on	Monday, November 21 2022 at 15:49:01
Imaged with CDR version	Crash Data Retrieval Tool 23.0.2
Imaged with Software Licensed to (Company Name)	collisiondata
Reported with CDR version	Crash Data Retrieval Tool 23.0.2
Reported with Software Licensed to (Company Name)	collisiondata
EDR Device Type	Airbag Control Module
Event(s) recovered	Record 1

Comments

Copart Orlando North

2021 Mercedes Benz A 220

Imaged Direct to Module using AC power supply.

Cable Number 832

Adapter Number F00K108387

Tire sizes match placard.

Data Limitations

Data Limitations

MERCEDES-BENZ SUPPLEMENTAL RESTRAINT SYSTEM (SRS) CONTROL MODULE DATA LIMITATIONS:

General Information:

SRS Control Module data limitations are intended to assist in reading event data that has been imaged from the vehicle's SRS control module. They are not intended to provide specific information regarding data interpretation. Event data should be considered in combination with other available physical evidence from the vehicle and scene.

Certain MY2014 and later Mercedes-Benz passenger vehicles are designed to fulfill the requirements of "49 CFR 563 - Event Data Recorders" for the US-market, and to be compatible with the Bosch CDR tool.

Mercedes-Benz passenger vehicles from MY2021 or later fulfill as well the standard „Event Data Recorder System" (GB 39732-2020 / National Standard of the People's Republic of China) for the China market.

The Recorded Crash Events can be read by the CDR tool via the vehicle's OBD connector. Connecting the CDR tool directly to the SRS Control Module should ONLY be considered if the vehicle's electrical system has been compromised. If it is necessary to remove the SRS Control Module from the vehicle, proceed with CAUTION! During bench top imaging, make sure the SRS Control Module remains stationary, and is NOT moved, tilted or rotated while connected to and powered by the CDR Interface Module. Also, after CDR imaging, wait at least one minute after power is removed from the SRS Control Module before attempting to move the module. Not following these general SRS Control Module guidelines for bench top imaging could cause new events to be recorded in the Module.

NOTE: When the CDR tool is connected directly to the SRS Control Module, the current fault status will be altered in case the Module is powered up without having all of the other vehicle inputs connected (e.g., benchtop imaging). However, this will not affect the stored fault data information in any of the Event Records.

To increase data safety, the transmitted data will be first signed by the SRS Control Module. This can take up to 60 seconds for each recorded event.

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.

The SRS Control Module can store six events in total, such as Non-Deployment Events (NDE) and Deployment Events (DE):

W1K3G4EB2M

- A Non-Deployment Event is recorded if the change in longitudinal or lateral velocity equals or exceeds 8km/h over a 150ms timeframe. Non-Deployment Events are stored into memory but (the oldest) can be over-written by subsequent Non-Deployment or Deployment Events.
- A Deployment Event is recorded if any type of non-reversible deployable restraint device (e.g., belt pretensioner(s), front airbag(s), side airbag(s), side curtain airbag(s), etc.) are commanded to deploy. Deployment Events are stored into memory and cannot be overwritten by any subsequent events.

The events will be imaged by the CDR tool in chronological order (e.g. the first event is the most recent one).

If power to the SRS Control Module is interrupted during an event, all data from this event will be stored (see information "Complete file recorded"). For subsequent events, all or part of the event data record may not be recorded. Such events cannot be retrieved by the CDR tool.

The "event begin" t0 is initiated by either:

- the change in longitudinal velocity equals or exceeds 0.8km/h over a 20ms timeframe (front threshold)
- the change in lateral velocity equals or exceeds 0.8km/h over a 5ms timeframe (side threshold)
- or
- the wake-up of the front, side, rear, presafe impulse or pedestrian protection algorithm.
- or
- deployment of a restraint by the rollover / pitchover algorithm

The event monitoring is at least 300ms, respectively recording 250ms, as long as:

- the change in longitudinal and lateral velocity does not equal or fall below 0.8km/h over a 20ms (longitudinal) respectively 5ms (lateral) timeframe.
- at least one of the algorithms is active.

Multiple Events:

Data recorded by the SRS Control Module and imaged by the CDR tool is displayed in relation to start of event (t0), NOT to the time at which the vehicle made contact with another vehicle or object.

Vehicle crash events may result in one or more stored Deployment or Non-Deployment events in the EDR.

Parallel Event: If there is more than one active crash algorithm during an accident, and if the start time for any algorithm occurs within 300ms of t0 for another algorithm, (e.g. angular impact, where front algorithm and side algorithm starts and resets individually), then these overlapping recordings are considered a "parallel event". In this case, the initially stored event is characterized by one of the following: 1) the first triggered algorithm (e.g., front, side, or rear); 2) the first event threshold which was exceeded (e.g., longitudinal or lateral velocity threshold); or 3) the deployment of a restraint by the rollover algorithm. Subsequent events are reported with reference to the initial event t0. A parallel event situation is also given when one algorithm is still active (after 300ms) and another algorithm becomes active during this active period (i.e. end of event is given when all algorithms are in reset).

Multiple Event: If there is more than one crash algorithm is active during an accident and if the algorithms do not overlap as described above, this is considered a "multiple event" if t0 for event occurs within 5 seconds after t0 of the first (initial) event. The chronological sequence within a multiple event is marked by the data element as "multi-event, number of events." The time period between this event and the preceding event is marked in the data element as "time from event n to n+1."

Separate Events: If there are more than one active crash algorithms during an accident, which do not overlap in time and for which start times t0 are set apart more than 5 seconds, then these are considered as separate events.

Data Elements:

The reported data elements may vary by different national regulations, vehicle model, model year or vehicle configuration.

Dynamic Pre-Crash Data:

- Dynamic Pre-Crash Data is recorded at 2 samples per second starting 5 seconds before t0.
- Pre-Crash Data is recorded asynchronously.
- Recorded Pre-Crash Data has a time resolution of 500ms. Therefore, the indicated time associated with the first pre-crash data element may be delayed by up to 500ms.
- Pre-Crash Data indicates "Data Invalid" if a message with an "invalid" flag from the module sending the pre-crash data is sent.
- Pre-Crash Data indicates "Data Not Available" if no data is received from the module sending the pre-crash data.
- "Vehicle speed" accuracy can be affected by various factors, such as significant changes in tire size from the factory original vehicle specification, wheel lockup or slip.
- "Accelerator Pedal Position, percent full" is the ratio of accelerator pedal position compared to the fully depressed position.
- "Service Brake Status" only indicates driver-initiated braking. Automatic braking (e.g. Autonomous Cruise Control) will not be recorded.
- Engine RPM (Combustion Engine): as reported by the Engine Control Module.
- Steering Input: as reported by the steering wheel angle sensor.
- ABS Activity: as reported by the Electronic Stability Control Module.
- Stability Control: as reported by the Electronic Stability Control Module.

Static Pre-Crash Data:

- Static Pre-Crash Data is recorded only one sample before crash (within 1 second before t0).
- "Safety Belt Status" as evaluated by the seat belt switches is reported as "Belted" or "Not Belted".
- "Seat Track Position Switch Status" as evaluated by the seat track position sensors is reported as "foremost" or "not foremost".
- "Occupant size classification, right front passenger airbag suppressed" data is recorded as "yes" (suppressed), if the front passenger seat sensor system determined that the passenger seat was empty or occupied by a child-seat.
- Airbag Warning Lamp, Status: as commanded by the SRS Control Module.

- "Ignition Cycle, Crash" means the number (count) of power cycles applied to the SRS Control Module at the time when the crash event occurred since the first use of the module. The power cycle starts when the SRS Control Module is awakened from sleep mode and ends when the module goes to sleep mode again.
- Vehicle Identification Number: identification of the vehicle in which the data was recorded
- Hardware Number of the ECU for recording EDR data
- Serial Number of the ECU for recording EDR data
- Software Number of the ECU for recording EDR data

Post Crash Data:

- Event Type: indicates the event type depending on the algorithm that triggered the recording criteria first (deployment or non-deployment).
- Multi-Event, Number of Events: determines the chronological order of records being part of a multi-event.
- Time from Previous / Initial Event to Current Event: indicates the time difference between records of multi-events.
- Delta-V data is recorded at 100Hz from t0 to 250ms.
- "Delta-V, longitudinal" reflects the change in velocity that the SRS Control Module experienced in the longitudinal direction during the recorded portion of the event and is not the speed at which the vehicle was traveling before the event.
- Depending on the severity of the event relative to the range of the accelerometer, saturation of the SRS Control Module longitudinal or lateral accelerometers may occur. This condition is recorded in the EDR.
- Clipping Time, Longitudinal / Lateral Acceleration Sensor: depending on the severity of the event, the measuring range of the longitudinal or lateral accelerometers may be exceeded. The data elements "Clipping Time, Longitudinal / Lateral Acceleration Sensor" indicate the time within an event when the measurement first exceeded the design range of the sensor. As a result, subsequent Delta-V values may be underestimated.
- "Restraint Deployment Time" (e.g. airbag(s)) is reported as the time that which a deployment was requested by this device.
- "Restraint Disposal" (e.g. 2nd stage of the frontal airbag(s)) is reported if a disposal request of this device occurs.
- Delta-V Longitudinal / Lateral: are recorded every 10ms from Time Zero to 250ms. Delta-V reflects the change in velocity that the ACM experienced during the recorded time period. It does not necessarily correlate with vehicle traveling speed.
- Longitudinal / Lateral Acceleration: are recorded every 10ms from Time Zero to 250ms (if supported).
- Complete File Recorded: indicates if the event data has been completely recorded to the EDR memory or if the recording process has been interrupted before completion.

Data during download:

- "Ignition Cycle, Download" means the number (count) of power cycles applied to the recording device at the time when the data was downloaded since the first use of the module. The power cycle starts when the SRS Control Module is awakened from sleep mode and ends when the module goes to sleep mode again.

Data Element Sign Convention:

Data Element Name	Positive Sign Notation Indicates
Delta-V, Longitudinal	Forward
Maximum Delta-V, Longitudinal	Forward
Delta-V, Lateral	Left to Right
Maximum Delta-V, Lateral	Left to Right
Steering Angle	Counterclockwise

Data Source:

All recorded data is measured and calculated within the SRS Control Module except for the following parameters (if recorded) which are transmitted via the vehicle's communication network to the SRS Control Module:

- Vehicle speed
- Service brake
- Engine RPM (combustion engine)
- Steering angle
- Seat track position switch status, driver
- Seat track position switch status, front passenger
- Occupant size classification, front passenger
- Stability control (ESP) activity
- Odometer
- Accelerator pedal position, percent full

Notes: If the accelerator pedal signal is stored as 0%, the following conditions can apply:

- Most cases: no input on the accelerator pedal (0% of the accelerator pedal position relative to fully pressed position)
- Rare cases: accelerator pedal is applied, but brake-override mechanism active. Brake-override mechanism: If a brake intervention by the driver is detected while the accelerator pedal is applied under certain conditions, it is assumed that the input of the accelerator pedal is not intended by the driver (e.g. sticking accelerator pedal). In this case the brake signal is prioritizes and the accelerator pedal signal set to 0%.

Hexadecimal Data:

All data that has been specified for imaging are shown in the hexadecimal data section of this report. However, not all of these data are translated by the CDR tool, but are necessary for correct data management (e.g. CRC check). The imaged SRS Control Module may contain additional data that are not retrievable by the CDR tool.

Privacy Regulation for US market:

As of February 2013 the following states: Arkansas, California, Connecticut, Maine, Nevada, New Hampshire, New York, North Dakota, Oregon, Texas, Virginia, Washington, Colorado, Delaware, Montana, New Jersey and Utah all have EDR Laws to address vehicle owner's privacy and consumer concerns. Subsequently, a 2015 Federal law prescribed privacy restrictions to address these same concerns. It is the responsibility of the user and end user to observe all applicable State and Federal privacy laws.

09001_Daimler003_r003

System Status at Event (Record 1, Most Recent)

Event Type	Rear
Time From Time Zero to Algo Start (Front) (msec)	Algorithm Not Started
Time From Time Zero to Algo Start (Side) (msec)	19
Time From Time Zero to Algo Start (Rear) (msec)	Algorithm Started at t0
Time From Time Zero to Deployment (Rollover) (msec)	Algorithm Not Started
Time From Time Zero to Deployment (Pitchover) (msec)	Algorithm Not Started
Time From Time Zero to Algo Start (Pedestrian Protection) (msec)	Algorithm Not Started
Maximum Delta-V, Longitudinal (MPH [km/h])	11.8 [19]
Maximum Delta-V, Lateral (MPH [km/h])	-1.2 [-2]
Time, Maximum Delta-V, Longitudinal (msec)	103
Time, Maximum Delta-V, Lateral (msec)	275
Clipping Time Longitudinal Sensor (msec)	Clipping Not Reached
Clipping Time Lateral Sensor (msec)	Clipping Not Reached
Multi-Event, Number of Events	1. Event
Time From Previous Event to Current Event (msec)	0
Time From Last Speed Data Sample (Precrash) to Time Zero (msec)	155
Complete File Recorded, Generic, Prio 1 Data	Completed Successfully
Ignition Cycle, Crash (cycle)	14,339
Ignition Cycle, Download (cycle)	14,341
Vehicle Mileage (km)	28,260
Operating Time (min)	79,933
Vehicle Identification Number	W1K3G4EB2M [REDACTED]
Event Counter, crash (counts)	1
Time from Initial Event to Current Event (msec)	Data Not Available
ECU Hardware Part Number	A2479018901
ECU Software Part Number	A1779025208
ECU Serial Number	T6421012953354

Deployment Command Data (Record 1, Most Recent)

Frontal Air Bag, Time to 1st Stage Deployment, Driver (msec)	Not Deployed
Frontal Air Bag, Time to 2nd Stage Deployment, Driver (msec)	Not Deployed
Frontal Air Bag, Time to 3rd Stage (Vent) Deployment, Driver (msec)	Not Deployed
Frontal Air Bag, 2nd Stage Disposal, Driver	Data Not Available
Frontal Air Bag, 3rd Stage (Vent) Disposal, Driver	Data Not Available
Frontal Air Bag, Time to 1st Stage Deployment, Front Passenger (msec)	Not Deployed
Frontal Air Bag, Time to 2nd Stage Deployment, Front Passenger (msec)	Not Deployed
Frontal Air Bag, Time to 3rd Stage (Vent) Deployment, Front Passenger (msec)	Not Deployed
Frontal Air Bag, 2nd Stage Disposal, Front Passenger	Data Not Available
Frontal Air Bag, 3rd Stage (Vent) Disposal, Front Passenger	Data Not Available
Side Air Bag, Time to Deployment 1st Stage, Driver (msec)	Not Deployed
Side Curtain/Tube Air Bag, Time to Deployment, Driver Side (msec)	Not Deployed
Pretensioner (1), Time to Deploy, Driver (msec)	91
Side Air Bag, Time to Deployment 1st Stage, Front Passenger (msec)	Not Deployed
Side Curtain/Tube Air Bag, Time to Deployment, Passenger Side (msec)	Not Deployed
Pretensioner (1), Time to Deploy, Front Passenger (msec)	91

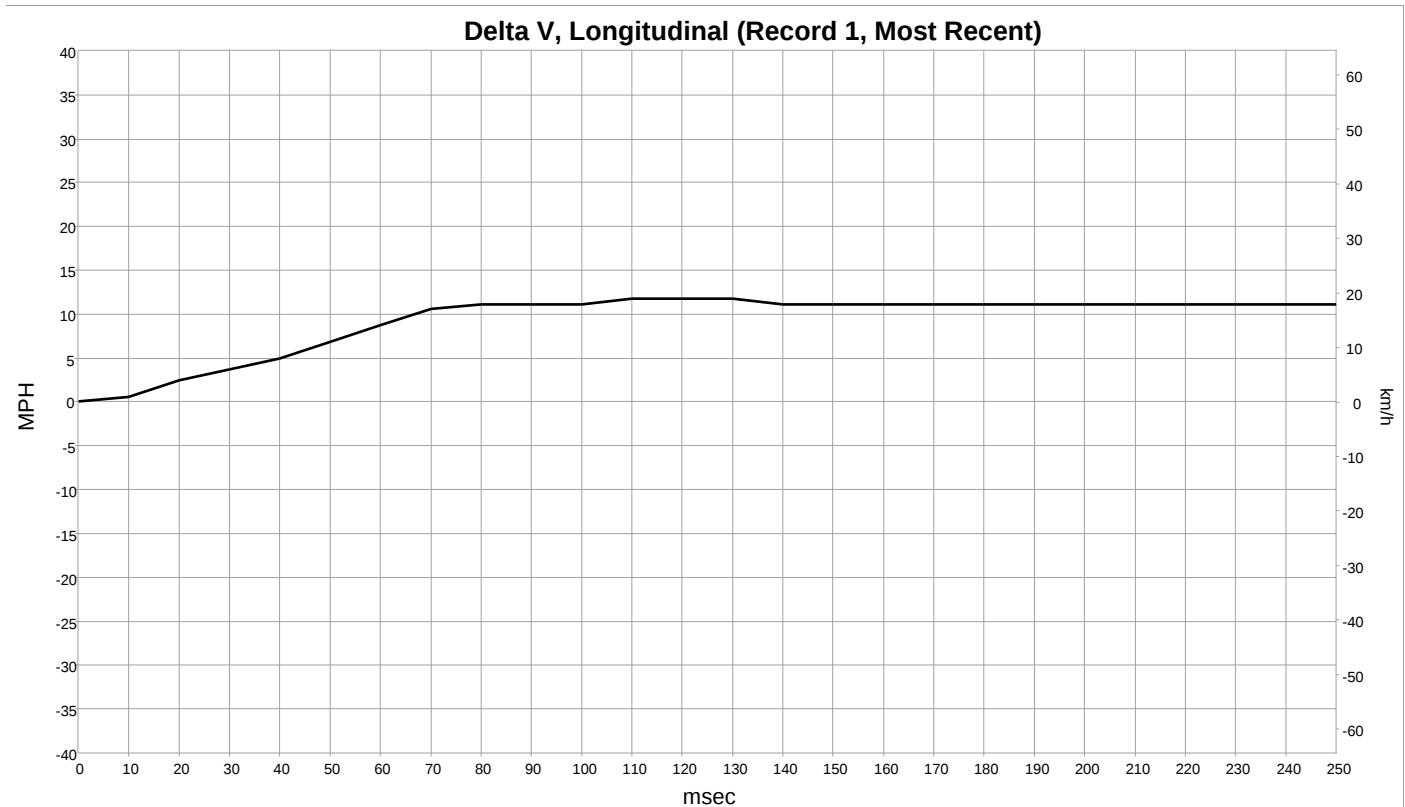
Pre-Crash Data -1 Sec (Record 1, Most Recent)

Safety Belt Status, Driver	Belted
Seat Track Position Switch Status, Driver	Not Foremost (Middle Rear)
Air Bag Warning Lamp (AWL)	Off
Air Bag Suppression Switch Status, Front Passenger (POS)	Data Not Available
Safety Belt Status, Front Passenger	Belted
Seat Track Position Switch Status, Front Passenger	Not Foremost (Middle Rear)
Occupant Size Classification, Front Passenger	50% Male

Pre-Crash Data -5 to 0 sec (Record 1, Most Recent)

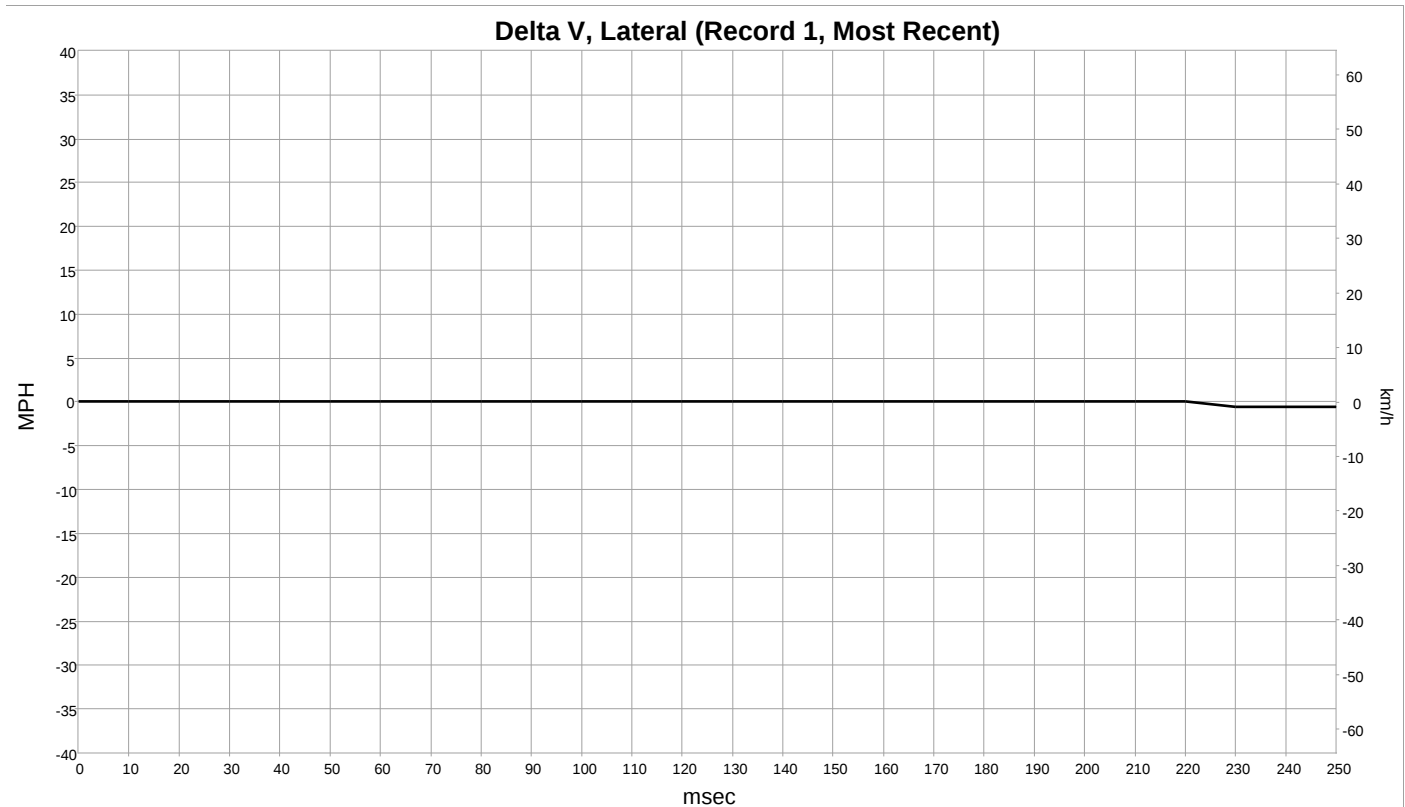
Time (sec)	Speed, Vehicle Indicated (MPH [km/h])	Accelerator Pedal (%)	Steering Input (deg)	Service Brake Activation	ABS Activity	Stability Control	Combustion Engine RPM (rpm)
-5.0	39 [62]	0	0	Off	No ABS Activity	No ESC Activity	1,600
-4.5	39 [62]	0	-2	On (Driver)	No ABS Activity	No ESC Activity	1,664
-4.0	38 [61]	0	0	On (Driver)	No ABS Activity	No ESC Activity	1,536
-3.5	32 [51]	0	0	On (Driver)	ABS Activity	No ESC Activity	1,280
-3.0	24 [38]	0	0	On (Driver)	No ABS Activity	No ESC Activity	1,088
-2.5	19 [30]	0	-4	On (Driver)	No ABS Activity	No ESC Activity	1,088
-2.0	14 [22]	0	-12	On (Driver)	No ABS Activity	No ESC Activity	832
-1.5	10 [16]	0	-10	On (Driver)	No ABS Activity	No ESC Activity	896
-1.0	7 [11]	0	-4	On (Driver)	No ABS Activity	No ESC Activity	832
-0.5	4 [7]	0	10	On (Driver)	No ABS Activity	No ESC Activity	768
0.0	4 [6]	0	-26	On (Driver)	No ABS Activity	No ESC Activity	768

Longitudinal Crash Pulse (Record 1, Most Recent)



Time (msec)	Delta-V, Longitudinal (MPH [km/h])
0	0.0 [0]
10	0.6 [1]
20	2.5 [4]
30	3.7 [6]
40	5.0 [8]
50	6.8 [11]
60	8.7 [14]
70	10.6 [17]
80	11.2 [18]
90	11.2 [18]
100	11.2 [18]
110	11.8 [19]
120	11.8 [19]
130	11.8 [19]
140	11.2 [18]
150	11.2 [18]
160	11.2 [18]
170	11.2 [18]
180	11.2 [18]
190	11.2 [18]
200	11.2 [18]
210	11.2 [18]
220	11.2 [18]
230	11.2 [18]
240	11.2 [18]
250	11.2 [18]

Lateral Crash Pulse (Record 1, Most Recent)



Time (msec)	Delta-V, Lateral (MPH [km/h])
0	0.0 [0]
10	0.0 [0]
20	0.0 [0]
30	0.0 [0]
40	0.0 [0]
50	0.0 [0]
60	0.0 [0]
70	0.0 [0]
80	0.0 [0]
90	0.0 [0]
100	0.0 [0]
110	0.0 [0]
120	0.0 [0]
130	0.0 [0]
140	0.0 [0]
150	0.0 [0]
160	0.0 [0]
170	0.0 [0]
180	0.0 [0]
190	0.0 [0]
200	0.0 [0]
210	0.0 [0]
220	0.0 [0]
230	-0.6 [-1]
240	-0.6 [-1]
250	-0.6 [-1]

Hexadecimal Data

```

FA10    02

FA12    01 00 00 06 45 00 00 05 C5

FA11    01 00 07

FA13    00 01 00 01 02 00 04 FF FF 00 05 00 13 00 06 00
        00 00 07 FF FF 00 08 FF FF 00 09 FF FF 00 1F 7D
        34 04 16 7F 80 83 85 87 8A 8D 90 91 91 91 92 92
        92 91 91 91 91 91 91 91 91 91 91 91 91 00 20 7D
        34 04 16 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
        7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7E 7E 7E 00 21 92
        00 22 7D 00 23 29 00 24 6E 00 28 FF 00 29 FF 00
        2D 01 00 2E 00 00 00 2F 00 9B 00 30 FF FF 00 33
        FF FF 00 34 FF FF 00 35 FF FF 00 36 FF 00 37 FF
        00 38 FF FF 00 39 FF FF 00 3A FF FF 00 3B FF 00
        3C FF 00 3D FF FF 00 3E FF FF 00 3F 00 5B 00 41
        FF FF 00 42 FF FF 00 43 00 5B 00 47 01 00 48 03
        00 4B 00 00 4C FF 00 4D 01 00 4E 03 00 4F 03 00
        5B 3E 3E 3D 33 26 1E 16 10 0B 07 06 00 5C 00 00
        00 00 00 00 00 00 00 00 00 00 5D 19 1A 18 14 11
        11 0D 0E 0D 0C 0C 00 5E 7F 7E 7F 7F 7F 7D 79 7A
        7D 84 72 00 5F 00 01 01 01 01 01 01 01 01 01 01
        00 60 00 00 00 01 00 00 00 00 00 00 00 00 61 00
        00 00 00 00 00 00 00 00 00 00 01 2C FF FF FF FF
        FF FF FF FF FF FF FF 01 2D FF FF FF FF FF FF FF
        FF FF FF FF 03 E8 A5 03 E9 38 03 03 EA 38 05 03
        F1 0B 0A 03 F2 01 38 3D 03 F3 57 31 4B 33 47 34
        45 42 32 4D 4A 33 30 37 38 33 33 03 F4 32 34 37
        39 30 31 38 39 30 31 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 03 F5 31
        37 37 39 30 32 35 32 30 38 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 03
        F6 54 36 34 32 31 30 31 32 39 35 33 33 35 34 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
        00 03 FB 04 03 FD 00 01 03 FE 75 A8 22 A1

FA14    00 00

FA15    00 00

FA16    00 00

FA17    00 00

FA18    00 00
    
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Disclaimer of Liability

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