
Vehicle Information

HY | SONATA(YF) | 2013 | ALL | AIRBAG SYSTEM

Additional Information

User : Richard R. Ruth, P.E.

CaseNumber : NHTSA 6942, MB5002, 2011 Hyundai Sonata Side Pole

CrashDate :

Part No. : 95910 - 3Q000

Save on : Saturday, April 20, 2013, at 23:25:10

G-EDR Software Version : 1.00

EDR Data Limitations

The retrieval of his EDR data has authorized by the vehicle's owner, or other legal authority.

The airbag ECU can store up to two events. Deployment events cannot be overwritten or cleared from airbag ECU. Non-deployment events(which did not qualify as deployable events) can be overwritten by subsequent events.

The specifications for EDR are designed to be compatible with NHTSA 49 CFR Part 563 rule. The EDR data recording specifications of airbag ECU are divided into the following four categories.

- For the Event#1: Event#1-1 Event#1-2 Event#1-3 Real-Time Data.

- For the Event#2: Event#2-1 Event#2-2 Event#2-3 Real-Time Data.

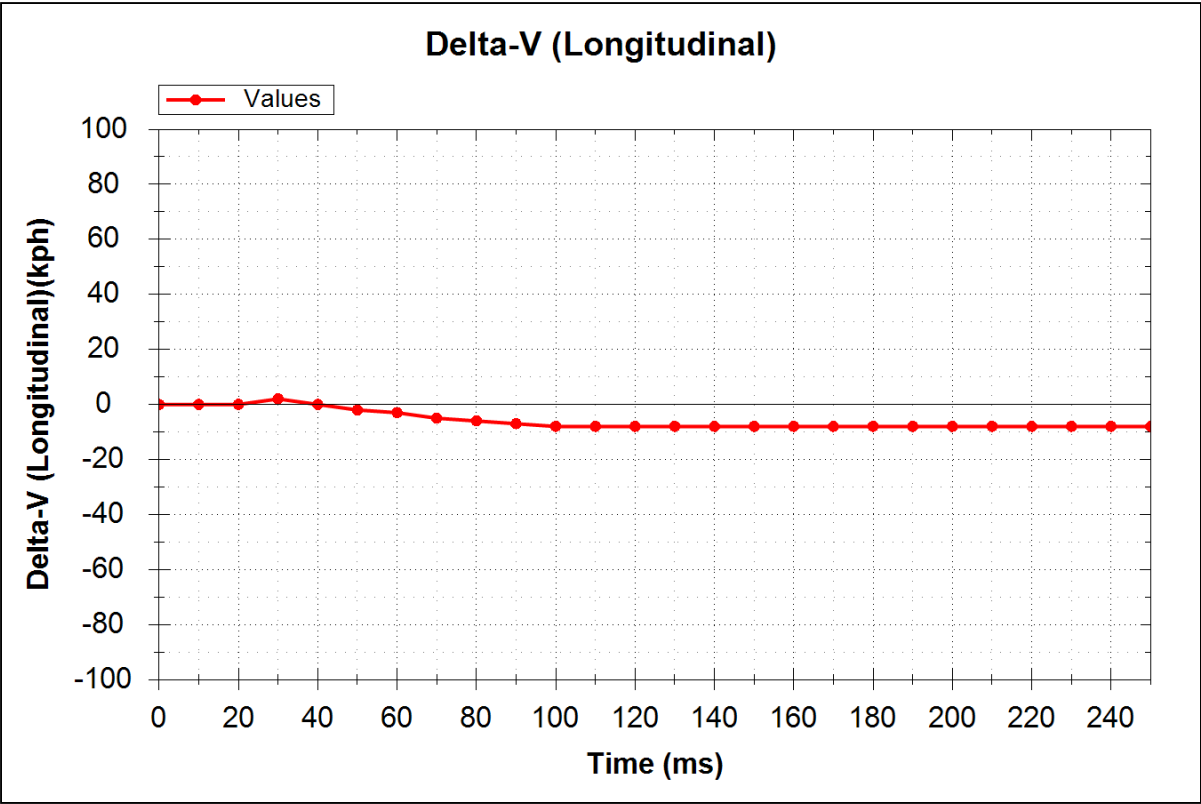
The airbag ECU records data for all or some of the following crash(event)

But, depending on the installed airbag ECU, data for side crash and/or rollover crash(event) may not be recored.

Ignition cycle counter(download) will increment by 1 every time when the power mode cycles is changed from OFF/Accessory to IGN/RUN or EDR data is downloaded by using the retrieval tool.

< Event # 1 - 1 >

1 [Delta-V (Longitudinal)]



Num	Time (ms)	Delta-V (Longitudinal) (kph)
1	0.0	0
2	10.0	0
3	20.0	0
4	30.0	2
5	40.0	0
6	50.0	-2
7	60.0	-3
8	70.0	-5
9	80.0	-6
10	90.0	-7
11	100.0	-8
12	110.0	-8
13	120.0	-8
14	130.0	-8
15	140.0	-8
16	150.0	-8
17	160.0	-8
18	170.0	-8
19	180.0	-8
20	190.0	-8

21	200.0	-8
22	210.0	-8
23	220.0	-8
24	230.0	-8
25	240.0	-8
26	250.0	-8

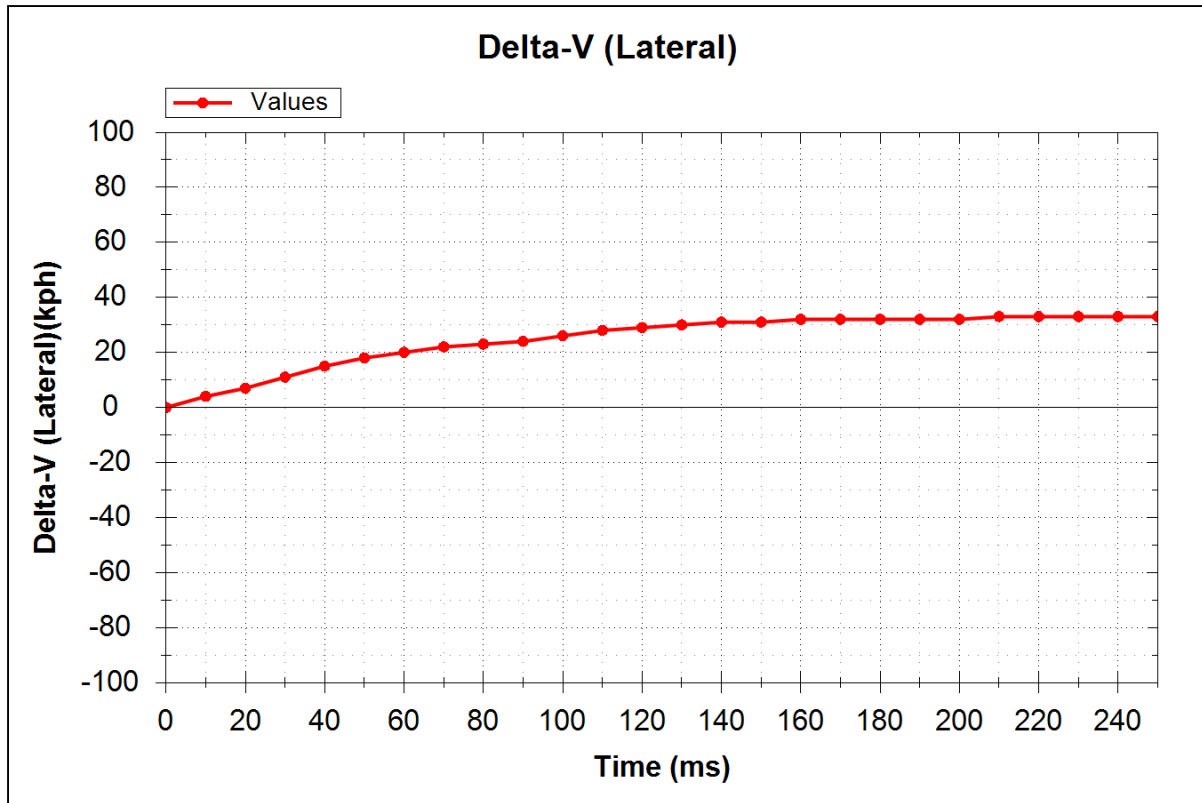
2 [Max. Delta-V (Longitudinal)]

Num	Max. Delta-V (Longitudinal) (kph)
1	-8

3 [Time_ Max. Delta-V (Longitudinal)]

Num	Time_ Max. Delta-V (Longitudinal) (ms)
1	300.0

4 [Delta-V (Lateral)]



Num	Time (ms)	Delta-V (Lateral) (kph)
1	0.0	0
2	10.0	4
3	20.0	7
4	30.0	11
5	40.0	15
6	50.0	18
7	60.0	20
8	70.0	22
9	80.0	23
10	90.0	24
11	100.0	26
12	110.0	28
13	120.0	29
14	130.0	30
15	140.0	31
16	150.0	31
17	160.0	32
18	170.0	32
19	180.0	32
20	190.0	32
21	200.0	32
22	210.0	33

23	220.0	33
24	230.0	33
25	240.0	33
26	250.0	33

5 [Max. Delta-V (Lateral)]

Num	Max. Delta-V (Lateral) (kph)
1	33

6 [Time_ Max. Delta-V (Lateral)]

Num	Time_ Max. Delta-V (Lateral) (ms)
1	300.0

7 [Time_ Max. Delta-V (Resultant)]

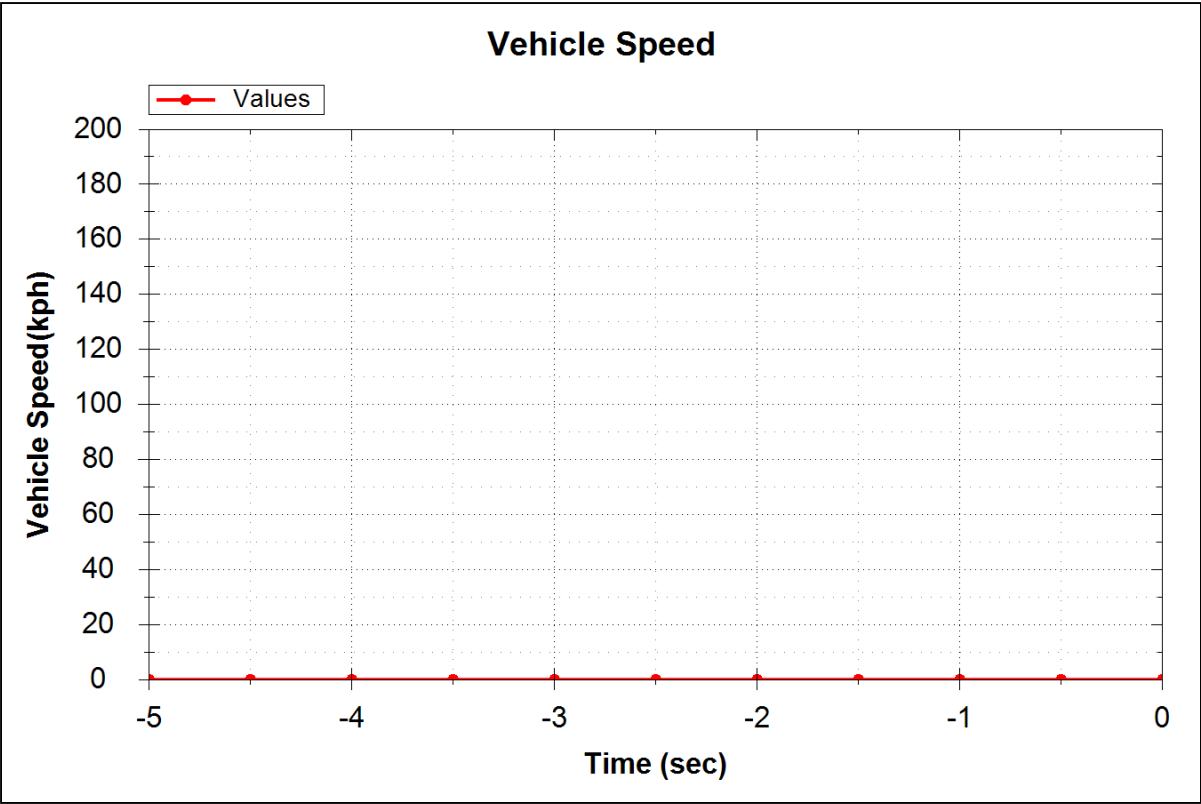
Num	Time_ Max. Delta-V (Resultant) (ms)
1	300.0

8 [Vehicle roll angle]

Not Supported...

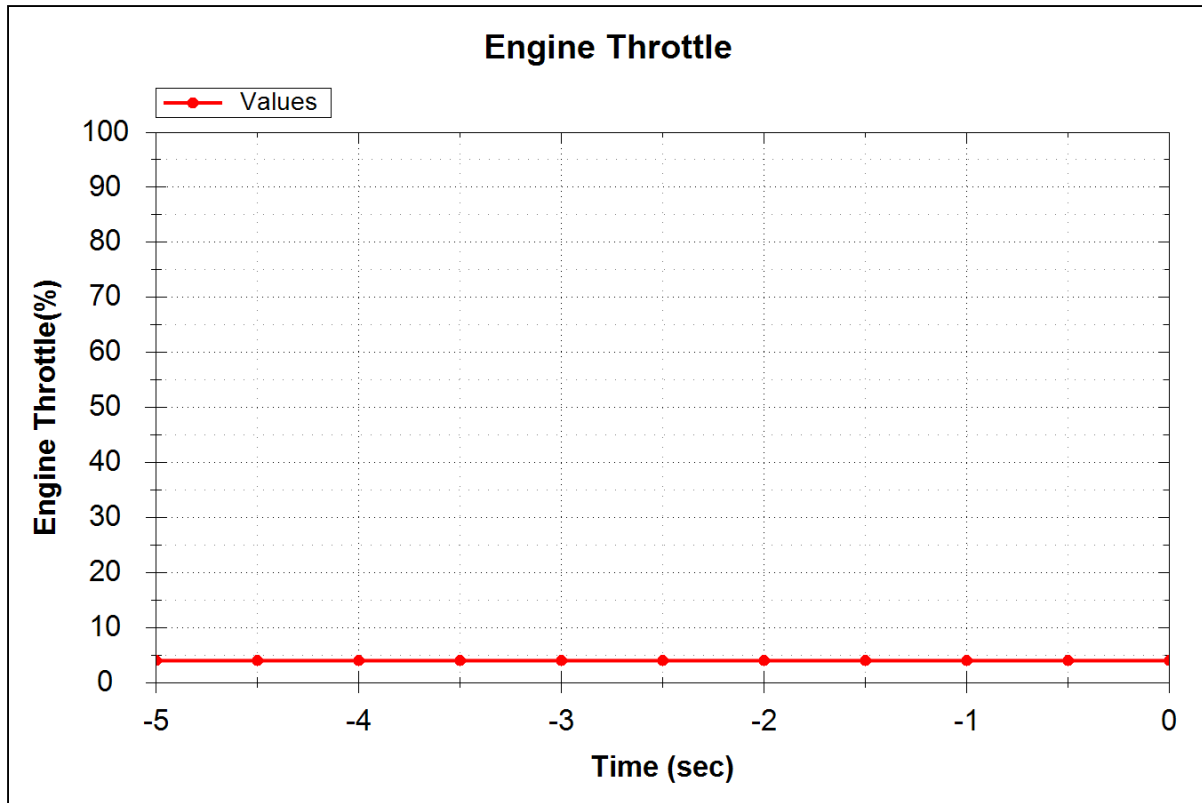
< Event # 1 - 2 >

1 [Vehicle Speed]



Num	Time (sec)	Vehicle Speed (kph)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

2 [Engine Throttle]



Num	Time (sec)	Engine Throttle (%)
1	-5.0	4
2	-4.5	4
3	-4.0	4
4	-3.5	4
5	-3.0	4
6	-2.5	4
7	-2.0	4
8	-1.5	4
9	-1.0	4
10	-0.5	4
11	0.0	4

3 [Service brake_ on/off]

Num	Time (sec)	Service brake_ on/off
1	-5.0	OFF
2	-4.5	OFF
3	-4.0	OFF
4	-3.5	OFF

5	-3.0	OFF
6	-2.5	OFF
7	-2.0	OFF
8	-1.5	OFF
9	-1.0	OFF
10	-0.5	OFF
11	0.0	OFF

4 [Ignition Cycle_ Crash]

Num	Ignition Cycle_ Crash (Cyc.)
1	83

5 [Safety belt status_ driver]

Num	Safety belt status_ driver
1	ON

6 [Airbag warning lamp on/off]

Num	Airbag warning lamp on/off
1	OFF

7 [Time to deploy_ Frontal airbag-1st stage_ driver]

Num	Time to deploy_ Frontal airbag-1st stage_ driver (ms)
1	0

8 [Time to deploy_ Frontal airbag-1st stage_ passenger]

Num	Time to deploy_ Frontal airbag-1st stage_ passenger (ms)
1	0

9 [Number of event]

Num	Number of event
1	1 event

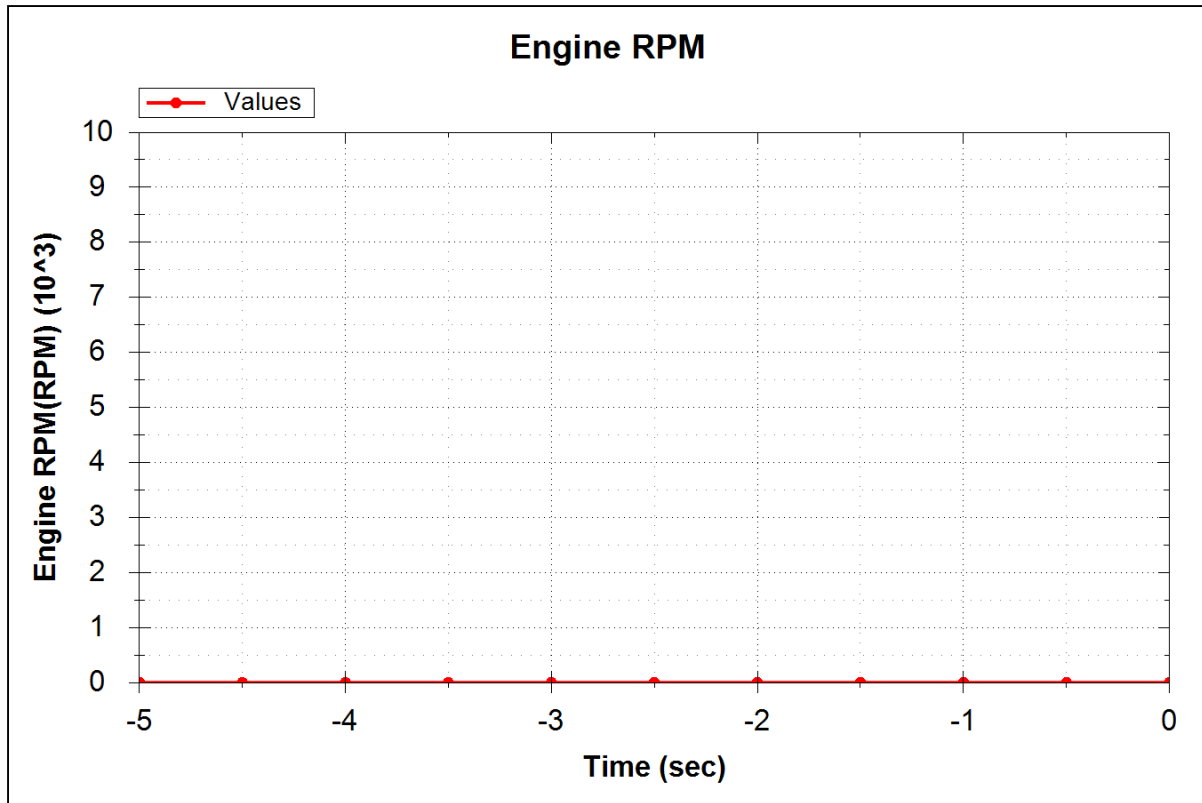
10 [Time from Event 1 to 2]

Num	Time from Event 1 to 2 (ms)
1	0

11 [Completed file recorded]

Num	Completed file recorded
1	YES

12 [Engine RPM]



Num	Time (sec)	Engine RPM (RPM)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

13 [ABS activity]

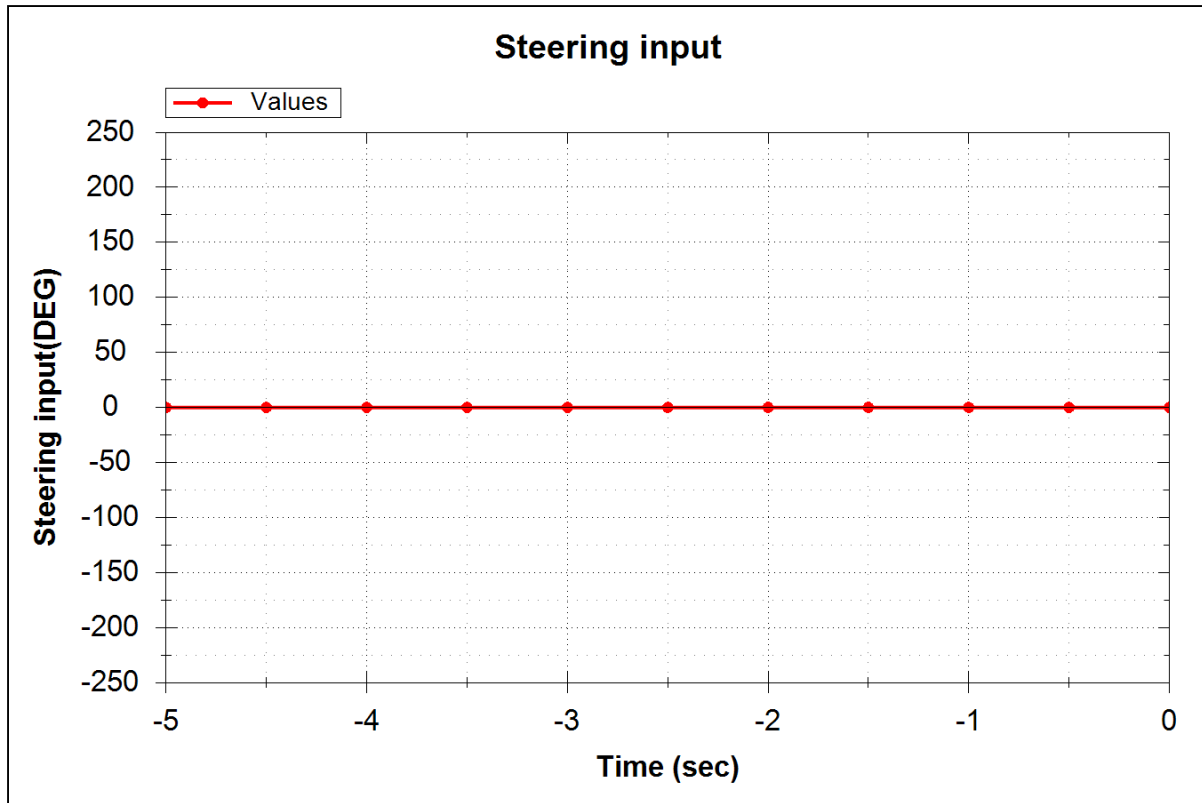
Num	Time (sec)	ABS activity
1	-5.0	OFF
2	-4.5	OFF
3	-4.0	OFF
4	-3.5	OFF

5	-3.0	OFF
6	-2.5	OFF
7	-2.0	OFF
8	-1.5	OFF
9	-1.0	OFF
10	-0.5	OFF
11	0.0	OFF

14 [Stability control]

Num	Time (sec)	Stability control
1	-5.0	ON
2	-4.5	ON
3	-4.0	ON
4	-3.5	ON
5	-3.0	ON
6	-2.5	ON
7	-2.0	ON
8	-1.5	ON
9	-1.0	ON
10	-0.5	ON
11	0.0	ON

15 [Steering input]



Num	Time (sec)	Steering input (DEG)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

Note) Positive value(CCW), Negative value(CW)

16 [Safety seat belt_ passenger]

Num	Safety seat belt_ passenger
1	OFF

17 [Seat track position switch_ foremost_ status_ driver]

Num	Seat track position switch_ foremost_ status_ driver
1	YES

18 [Seat track position switch_ foremost_ status_ passenger]

Num	Seat track position switch_ foremost_ status_ passenger
1	Not Supported

19 [Occupant size(5th percentile female or larger) classification_ driver]

Num	Occupant size(5th percentile female or larger) classification_ driver
1	Not Supported

20 [Occupant size(Child) classification_ passenger]

Num	Occupant size(Child) classification_ passenger
1	No

21 [Time to deploy_ Frontal airbag-2nd stage_ driver]

Num	Time to deploy_ Frontal airbag-2nd stage_ driver (ms)
1	0

22 [Time to deploy_ Frontal airbag-2nd stage_ passenger]

Num	Time to deploy_ Frontal airbag-2nd stage_ passenger (ms)
1	0

23 [Time to deploy_ side airbag_ driver]

Num	Time to deploy_ side airbag_ driver (ms)
1	0

24 [Time to deploy_ side airbag_ passenger]

Num	Time to deploy_ side airbag_ passenger (ms)
1	0

25 [Time to deploy_ curtain airbag_ driver]

Num	Time to deploy_ curtain airbag_ driver (ms)
1	0

26 [Time to deploy_ curtain airbag_ passenger]

Num	Time to deploy_ curtain airbag_ passenger (ms)
1	0

27 [Time to fire_ pretensioner_ driver]

Num	Time to fire_ pretensioner_ driver (ms)
1	0

28 [Time to fire_ pretensioner_ passenger]

Num	Time to fire_ pretensioner_ passenger (ms)
1	0

29 [Frontal airbag deployment_ Second stage disposal_ driver]

Num	Frontal airbag deployment_ Second stage disposal_ driver
1	NO

30 [Frontal airbag deployment_ Third stage disposal_ driver]

Num	Frontal airbag deployment_ Third stage disposal_ driver
1	NO

31 [Frontal airbag deployment_ Second stage disposal_ right front passenger]

Num	Frontal airbag deployment_ Second stage disposal_ right front passenger
1	NO

32 [Frontal airbag deployment_ Third stage disposal_ right front passenger]

Num	Frontal airbag deployment_ Third stage disposal_ right front passenger
1	NO

33 [Time to deploy_ Frontal airbag-3rd stage_ driver]

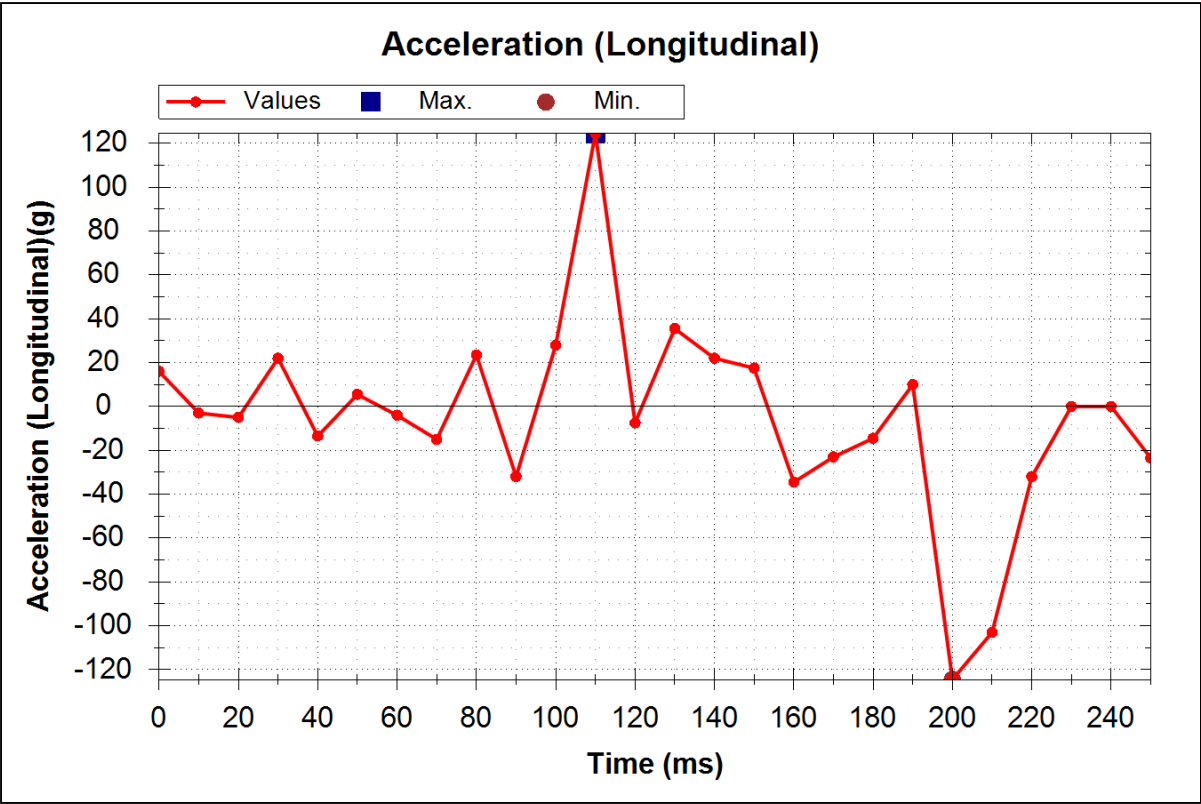
Not Supported...

34 [Time to deploy_ Frontal airbag-3rd stage_ passenger]

Not Supported...

< Event # 1 - 3 >

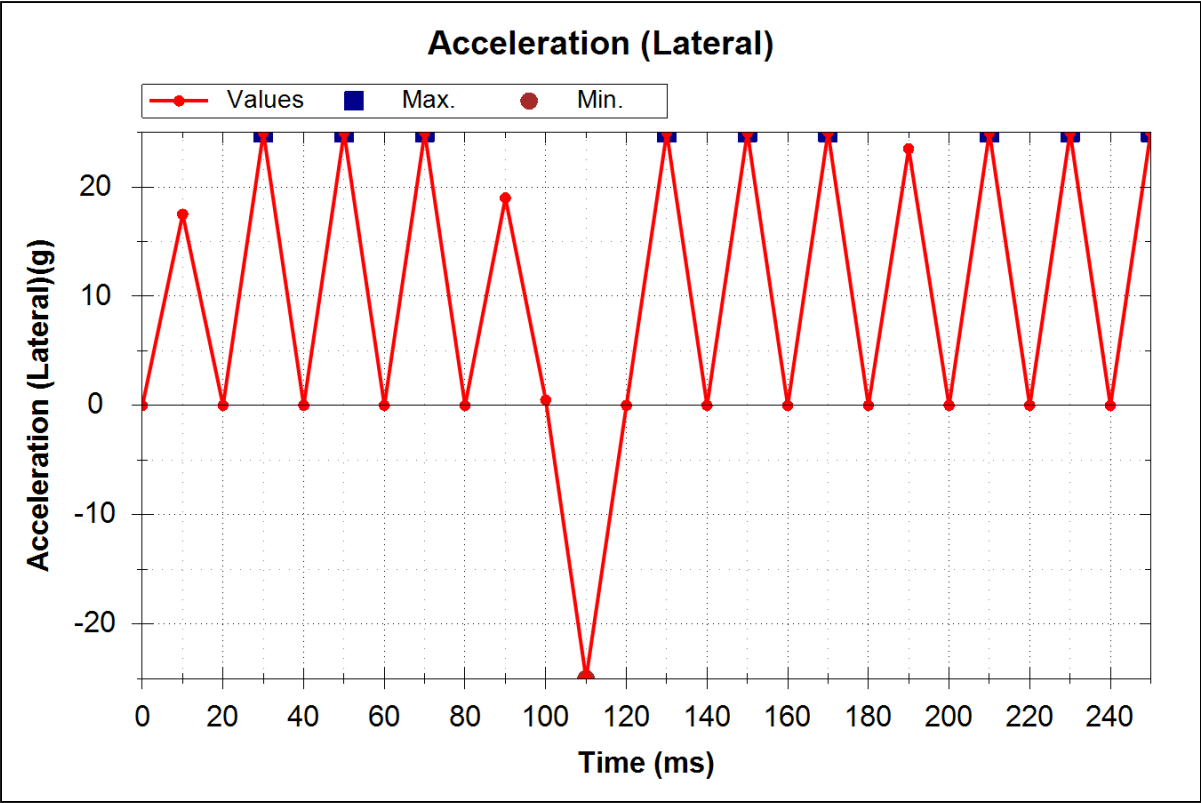
1 [Acceleration (Longitudinal)]



Num	Time (ms)	Acceleration (Longitudinal) (g)
1	0.0	16.0
2	10.0	-3.0
3	20.0	-5.0
4	30.0	22.0
5	40.0	-13.5
6	50.0	5.5
7	60.0	-4.0
8	70.0	-15.0
9	80.0	23.5
10	90.0	-32.0
11	100.0	28.0
12	110.0	124.5
13	120.0	-7.5
14	130.0	35.5
15	140.0	22.0
16	150.0	17.5
17	160.0	-34.5
18	170.0	-23.0
19	180.0	-14.5
20	190.0	10.0

21	200.0	-124.5
22	210.0	-103.0
23	220.0	-32.0
24	230.0	0.0
25	240.0	0.0
26	250.0	-23.5

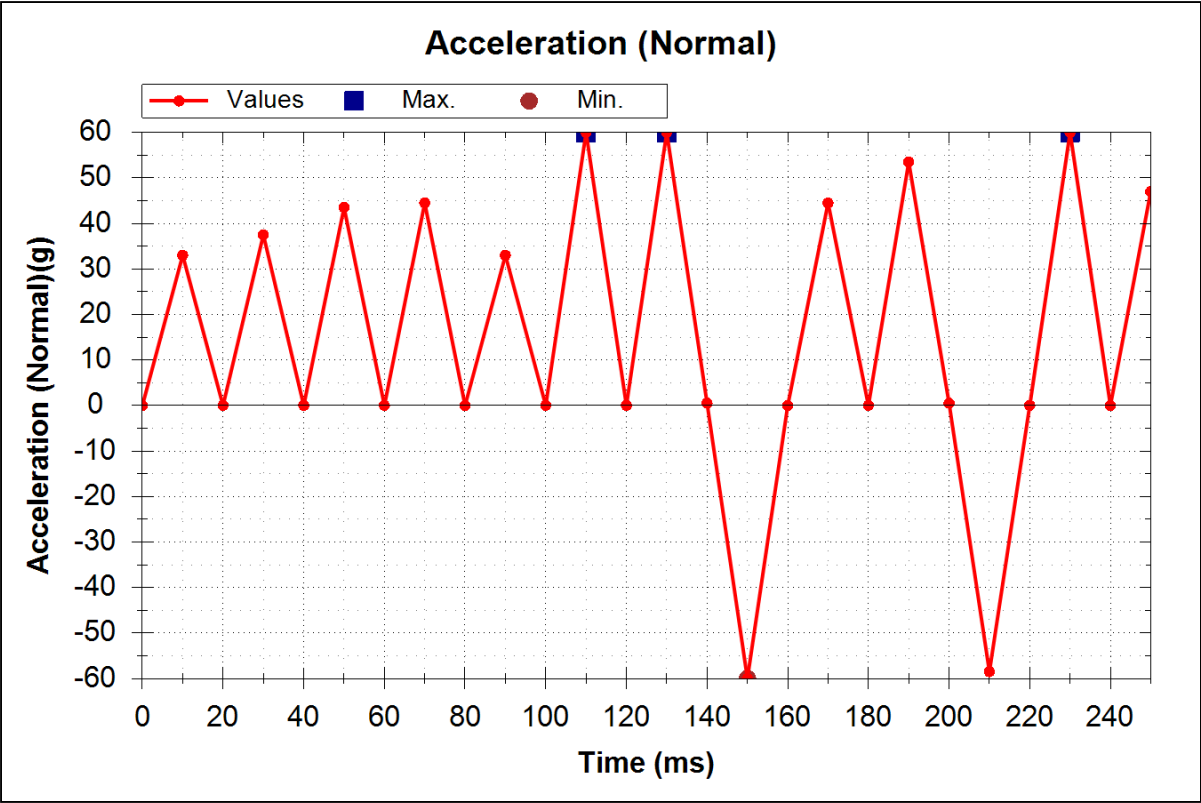
2 [Acceleration (Lateral)]



Num	Time (ms)	Acceleration (Lateral) (g)
1	0.0	0.0
2	10.0	17.5
3	20.0	0.0
4	30.0	25.0
5	40.0	0.0
6	50.0	25.0
7	60.0	0.0
8	70.0	25.0
9	80.0	0.0
10	90.0	19.0
11	100.0	0.5
12	110.0	-25.0
13	120.0	0.0
14	130.0	25.0
15	140.0	0.0
16	150.0	25.0
17	160.0	0.0
18	170.0	25.0
19	180.0	0.0
20	190.0	23.5
21	200.0	0.0
22	210.0	25.0

23	220.0	0.0
24	230.0	25.0
25	240.0	0.0
26	250.0	25.0

3 [Acceleration (Normal)]



Num	Time (ms)	Acceleration (Normal) (g)
1	0.0	0.0
2	10.0	33.0
3	20.0	0.0
4	30.0	37.5
5	40.0	0.0
6	50.0	43.5
7	60.0	0.0
8	70.0	44.5
9	80.0	0.0
10	90.0	33.0
11	100.0	0.0
12	110.0	60.0
13	120.0	0.0
14	130.0	60.0
15	140.0	0.5
16	150.0	-60.0
17	160.0	0.0
18	170.0	44.5
19	180.0	0.0
20	190.0	53.5
21	200.0	0.5
22	210.0	-58.5

23	220.0	0.0
24	230.0	60.0
25	240.0	0.0
26	250.0	47.0

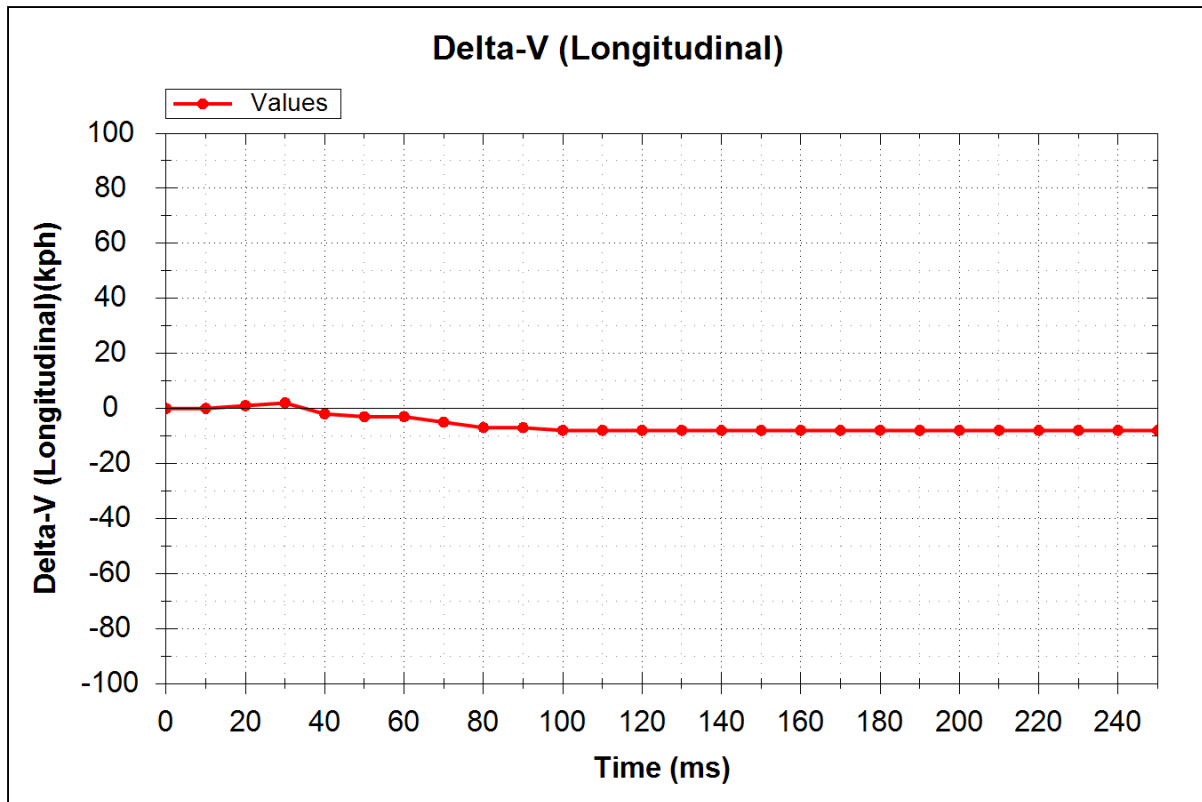
< Real-time Data >

1 [Ignition cycle_download]

Num	Ignition cycle_download (Cyc.)
1	Invalid data

< Event # 2 - 1 >

1 [Delta-V (Longitudinal)]



Num	Time (ms)	Delta-V (Longitudinal) (kph)
1	0.0	0
2	10.0	0
3	20.0	1
4	30.0	2
5	40.0	-2
6	50.0	-3
7	60.0	-3
8	70.0	-5
9	80.0	-7
10	90.0	-7
11	100.0	-8
12	110.0	-8
13	120.0	-8
14	130.0	-8
15	140.0	-8
16	150.0	-8
17	160.0	-8
18	170.0	-8
19	180.0	-8
20	190.0	-8

21	200.0	-8
22	210.0	-8
23	220.0	-8
24	230.0	-8
25	240.0	-8
26	250.0	-8

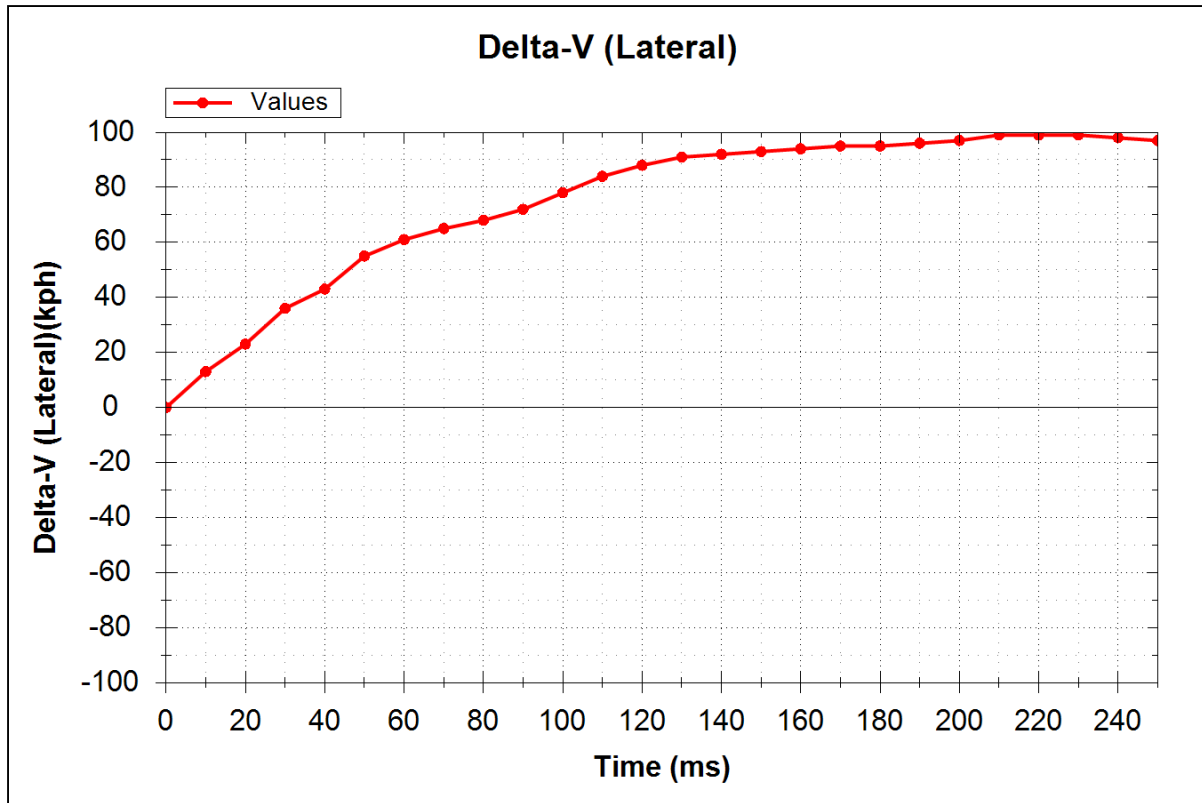
2 [Max. Delta-V (Longitudinal)]

Num	Max. Delta-V (Longitudinal) (kph)
1	-8

3 [Time_ Max. Delta-V (Longitudinal)]

Num	Time_ Max. Delta-V (Longitudinal) (ms)
1	300.0

4 [Delta-V (Lateral)]



Num	Time (ms)	Delta-V (Lateral) (kph)
1	0.0	0
2	10.0	13
3	20.0	23
4	30.0	36
5	40.0	43
6	50.0	55
7	60.0	61
8	70.0	65
9	80.0	68
10	90.0	72
11	100.0	78
12	110.0	84
13	120.0	88
14	130.0	91
15	140.0	92
16	150.0	93
17	160.0	94
18	170.0	95
19	180.0	95
20	190.0	96
21	200.0	97
22	210.0	99

23	220.0	99
24	230.0	99
25	240.0	98
26	250.0	97

5 [Max. Delta-V (Lateral)]

Num	Max. Delta-V (Lateral) (kph)
1	99

6 [Time_ Max. Delta-V (Lateral)]

Num	Time_ Max. Delta-V (Lateral) (ms)
1	300.0

7 [Time_ Max. Delta-V (Resultant)]

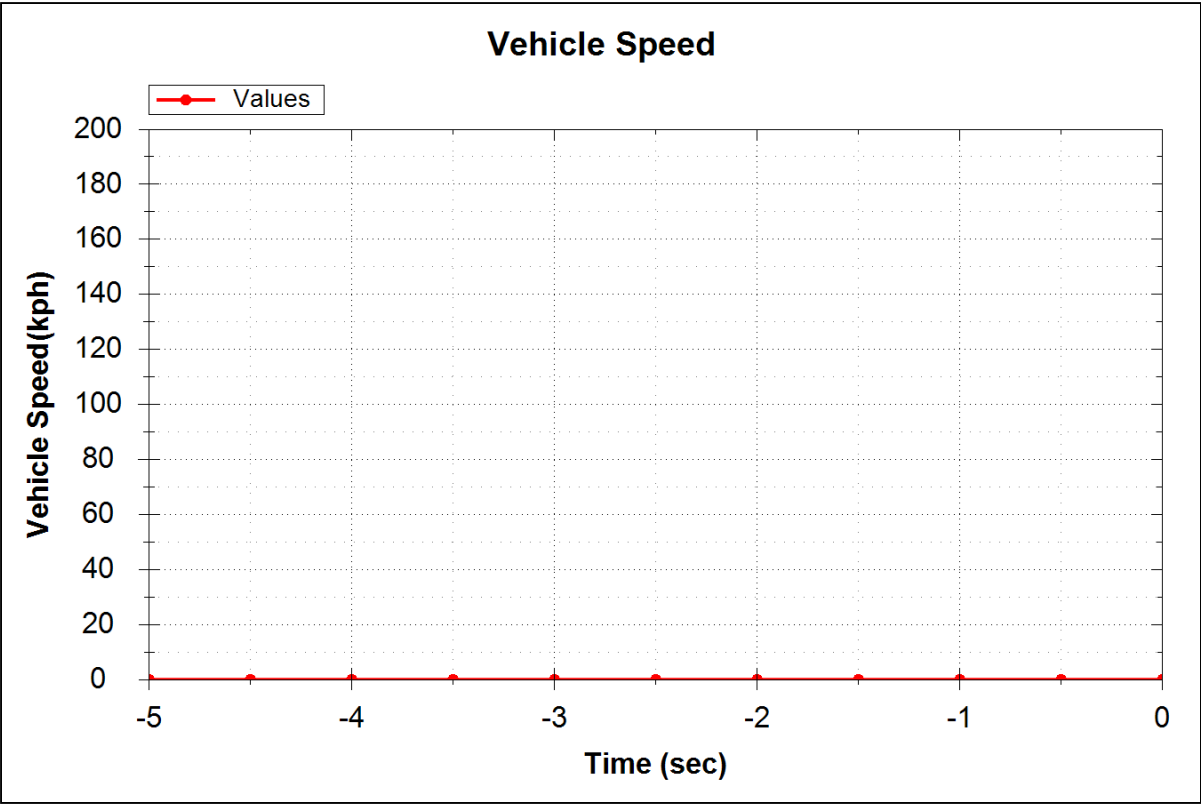
Num	Time_ Max. Delta-V (Resultant) (ms)
1	300.0

8 [Vehicle roll angle]

Not Supported...

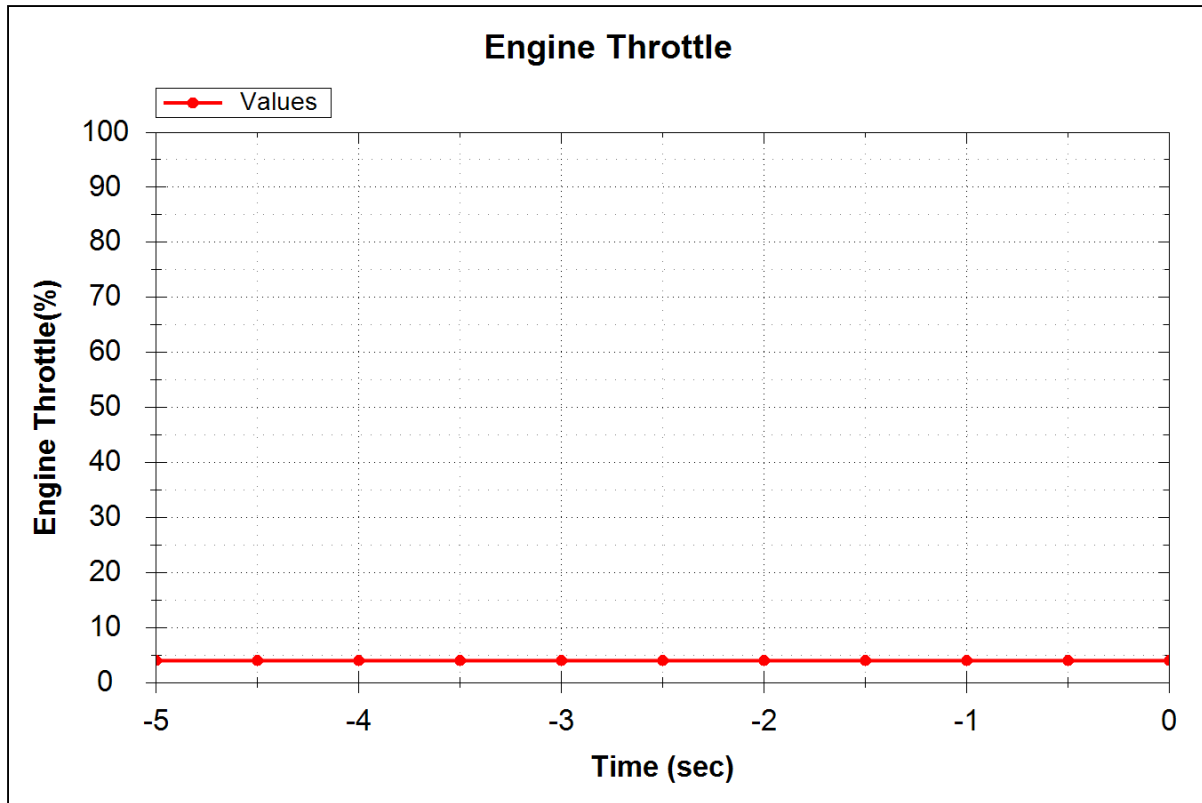
< Event # 2 - 2 >

1 [Vehicle Speed]



Num	Time (sec)	Vehicle Speed (kph)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

2 [Engine Throttle]



Num	Time (sec)	Engine Throttle (%)
1	-5.0	4
2	-4.5	4
3	-4.0	4
4	-3.5	4
5	-3.0	4
6	-2.5	4
7	-2.0	4
8	-1.5	4
9	-1.0	4
10	-0.5	4
11	0.0	4

3 [Service brake_ on/off]

Num	Time (sec)	Service brake_ on/off
1	-5.0	OFF
2	-4.5	OFF
3	-4.0	OFF
4	-3.5	OFF

5	-3.0	OFF
6	-2.5	OFF
7	-2.0	OFF
8	-1.5	OFF
9	-1.0	OFF
10	-0.5	OFF
11	0.0	OFF

4 [Ignition Cycle_ Crash]

Num	Ignition Cycle_ Crash (Cyc.)
1	83

5 [Safety belt status_ driver]

Num	Safety belt status_ driver
1	ON

6 [Airbag warning lamp on/off]

Num	Airbag warning lamp on/off
1	OFF

7 [Time to deploy_ Frontal airbag-1st stage_ driver]

Num	Time to deploy_ Frontal airbag-1st stage_ driver (ms)
1	0

8 [Time to deploy_ Frontal airbag-1st stage_ passenger]

Num	Time to deploy_ Frontal airbag-1st stage_ passenger (ms)
1	0

9 [Number of event]

Num	Number of event
1	2 event

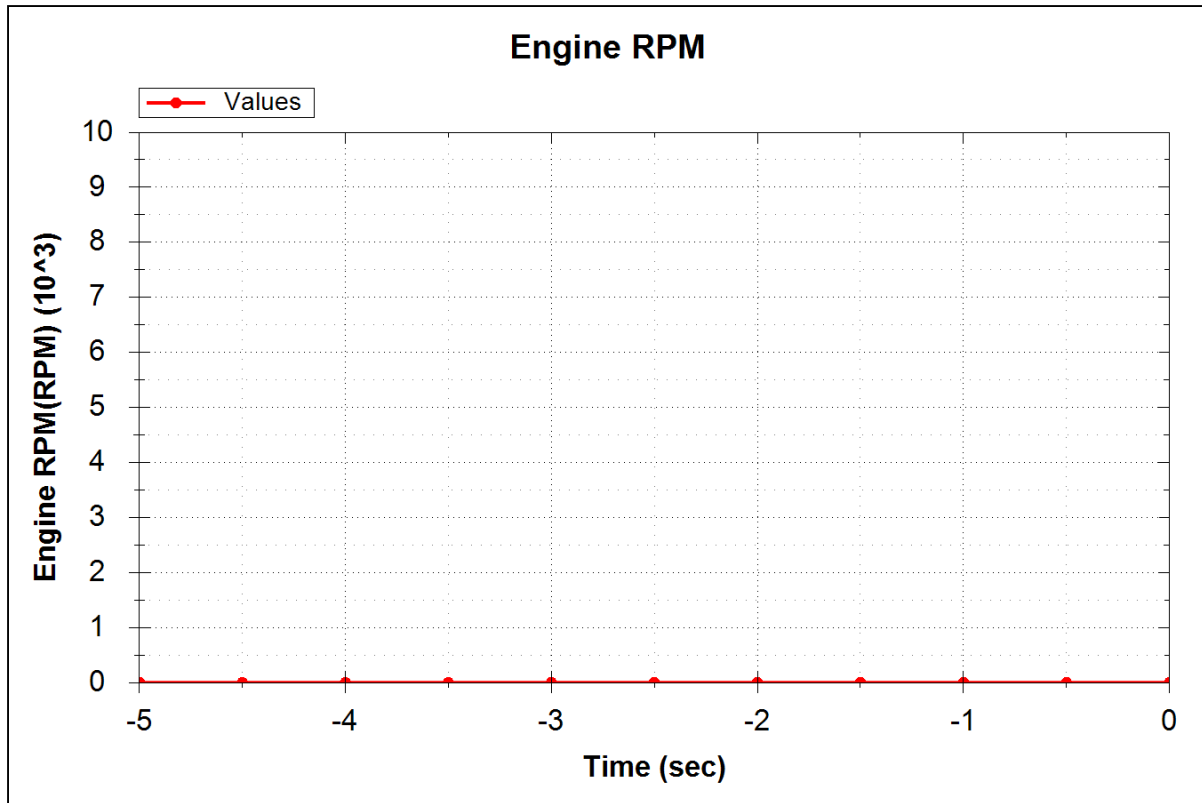
10 [Time from Event 1 to 2]

Num	Time from Event 1 to 2 (ms)
1	0

11 [Completed file recorded]

Num	Completed file recorded
1	YES

12 [Engine RPM]



Num	Time (sec)	Engine RPM (RPM)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

13 [ABS activity]

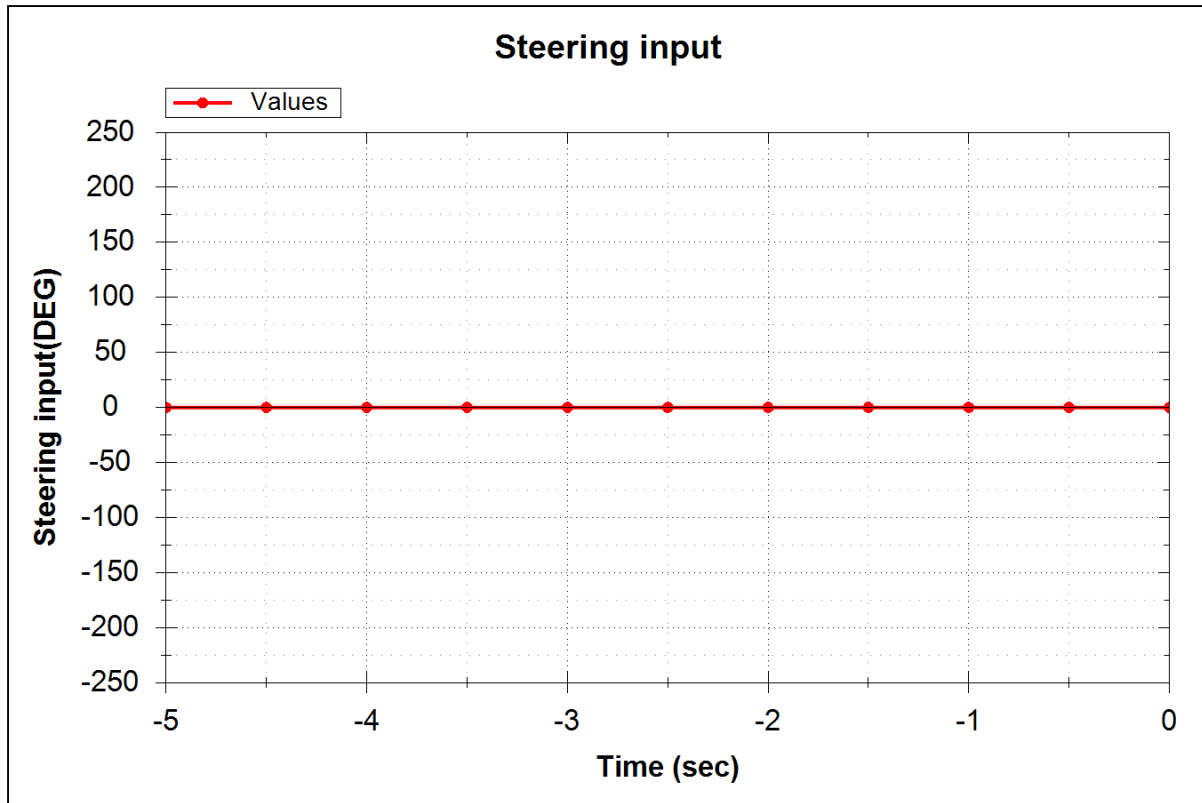
Num	Time (sec)	ABS activity
1	-5.0	OFF
2	-4.5	OFF
3	-4.0	OFF
4	-3.5	OFF

5	-3.0	OFF
6	-2.5	OFF
7	-2.0	OFF
8	-1.5	OFF
9	-1.0	OFF
10	-0.5	OFF
11	0.0	OFF

14 [Stability control]

Num	Time (sec)	Stability control
1	-5.0	ON
2	-4.5	ON
3	-4.0	ON
4	-3.5	ON
5	-3.0	ON
6	-2.5	ON
7	-2.0	ON
8	-1.5	ON
9	-1.0	ON
10	-0.5	ON
11	0.0	ON

15 [Steering input]



Num	Time (sec)	Steering input (DEG)
1	-5.0	0
2	-4.5	0
3	-4.0	0
4	-3.5	0
5	-3.0	0
6	-2.5	0
7	-2.0	0
8	-1.5	0
9	-1.0	0
10	-0.5	0
11	0.0	0

Note) Positive value(CCW), Negative value(CW)

16 [Safety seat belt_ passenger]

Num	Safety seat belt_ passenger
1	OFF

17 [Seat track position switch_ foremost_ status_ driver]

Num	Seat track position switch_ foremost_ status_ driver
1	YES

18 [Seat track position switch_ foremost_ status_ passenger]

Num	Seat track position switch_ foremost_ status_ passenger
1	Not Supported

19 [Occupant size(5th percentile female or larger) classification_ driver]

Num	Occupant size(5th percentile female or larger) classification_ driver
1	Not Supported

20 [Occupant size(Child) classification_ passenger]

Num	Occupant size(Child) classification_ passenger
1	No

21 [Time to deploy_ Frontal airbag-2nd stage_ driver]

Num	Time to deploy_ Frontal airbag-2nd stage_ driver (ms)
1	0

22 [Time to deploy_ Frontal airbag-2nd stage_ passenger]

Num	Time to deploy_ Frontal airbag-2nd stage_ passenger (ms)
1	0

23 [Time to deploy_ side airbag_ driver]

Num	Time to deploy_ side airbag_ driver (ms)
1	0

24 [Time to deploy_ side airbag_ passenger]

Num	Time to deploy_ side airbag_ passenger (ms)
1	0

25 [Time to deploy_ curtain airbag_ driver]

Num	Time to deploy_ curtain airbag_ driver (ms)
1	0

26 [Time to deploy_ curtain airbag_ passenger]

Num	Time to deploy_ curtain airbag_ passenger (ms)
1	0

27 [Time to fire_ pretensioner_ driver]

Num	Time to fire_ pretensioner_ driver (ms)
1	0

28 [Time to fire_ pretensioner_ passenger]

Num	Time to fire_ pretensioner_ passenger (ms)
1	0

29 [Frontal airbag deployment_ Second stage disposal_ driver]

Num	Frontal airbag deployment_ Second stage disposal_ driver
1	NO

30 [Frontal airbag deployment_ Third stage disposal_ driver]

Num	Frontal airbag deployment_ Third stage disposal_ driver
1	NO

31 [Frontal airbag deployment_ Second stage disposal_ right front passenger]

Num	Frontal airbag deployment_ Second stage disposal_ right front passenger
1	NO

32 [Frontal airbag deployment_ Third stage disposal_ right front passenger]

Num	Frontal airbag deployment_ Third stage disposal_ right front passenger
1	NO

33 [Time to deploy_ Frontal airbag-3rd stage_ driver]

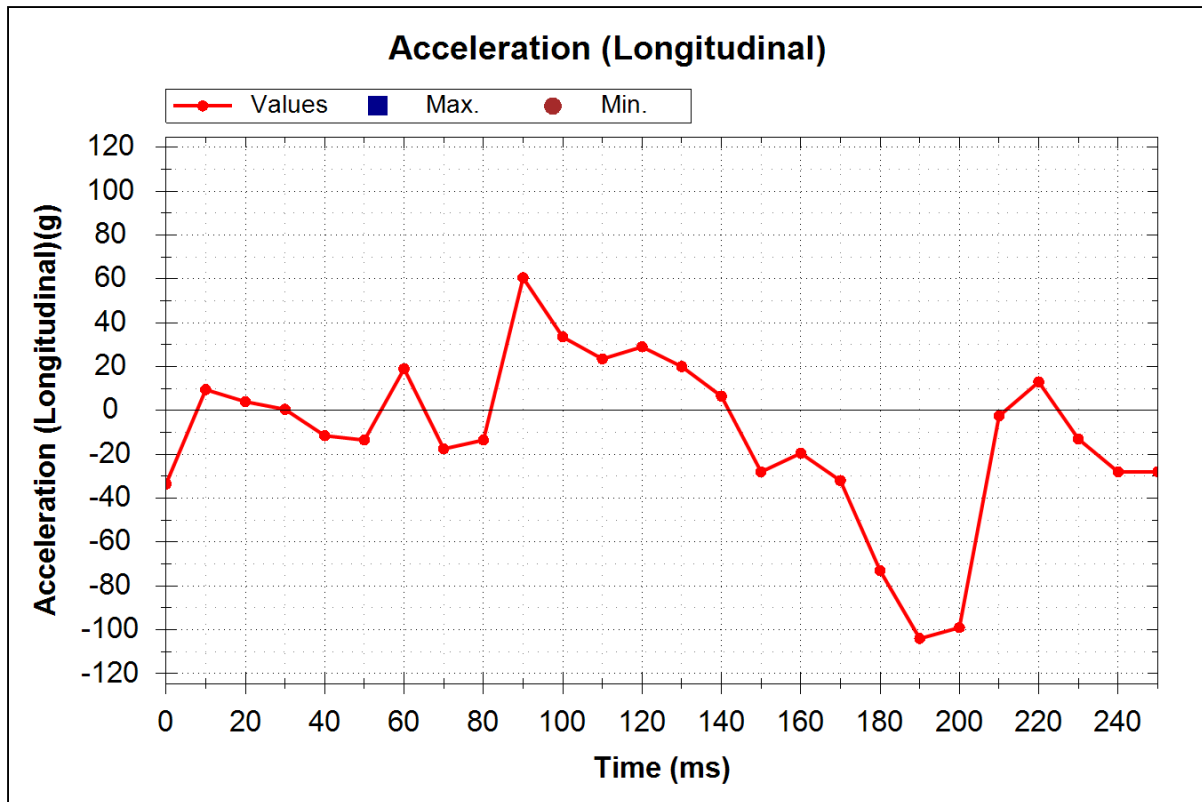
Not Supported...

34 [Time to deploy_ Frontal airbag-3rd stage_ passenger]

Not Supported...

< Event # 2 - 3 >

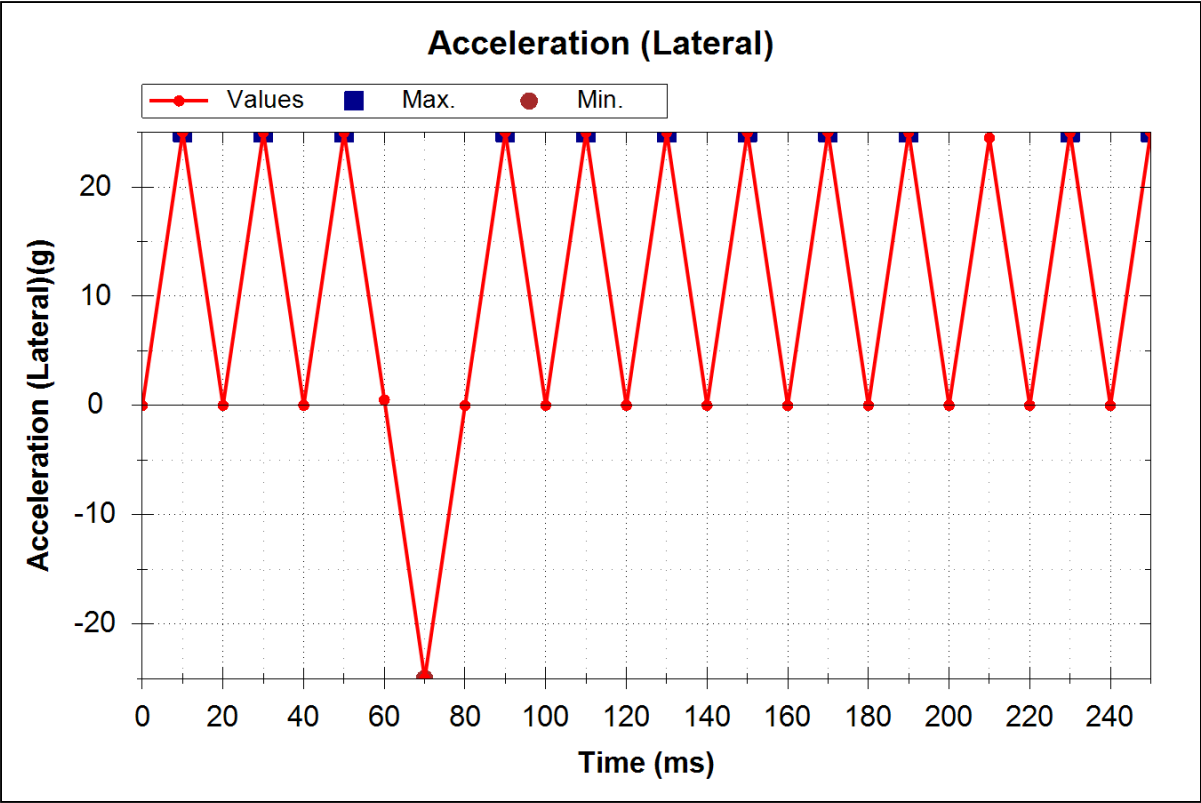
1 [Acceleration (Longitudinal)]



Num	Time (ms)	Acceleration (Longitudinal) (g)
1	0.0	-33.5
2	10.0	9.5
3	20.0	4.0
4	30.0	0.5
5	40.0	-11.5
6	50.0	-13.5
7	60.0	19.0
8	70.0	-17.5
9	80.0	-13.5
10	90.0	60.5
11	100.0	33.5
12	110.0	23.5
13	120.0	29.0
14	130.0	20.0
15	140.0	6.5
16	150.0	-28.0
17	160.0	-19.5
18	170.0	-32.0
19	180.0	-73.0
20	190.0	-104.0

21	200.0	-99.0
22	210.0	-2.5
23	220.0	13.0
24	230.0	-13.0
25	240.0	-28.0
26	250.0	-28.0

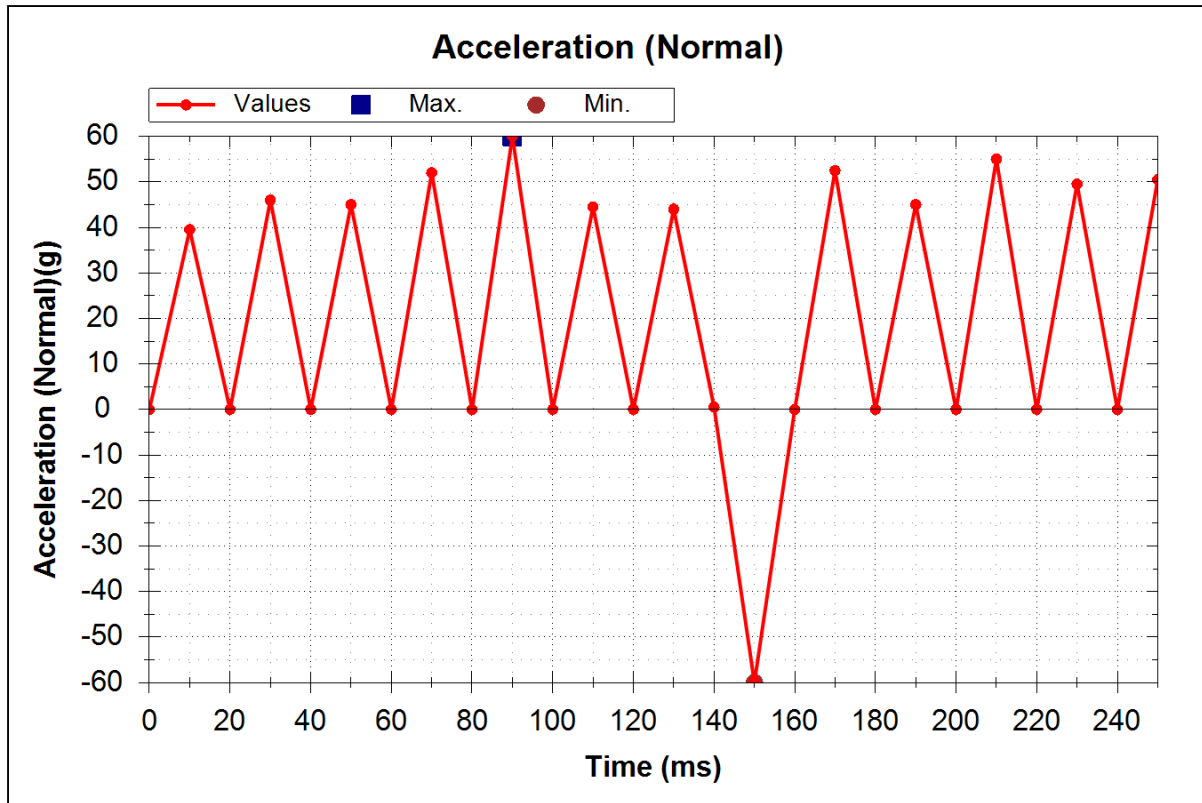
2 [Acceleration (Lateral)]



Num	Time (ms)	Acceleration (Lateral) (g)
1	0.0	0.0
2	10.0	25.0
3	20.0	0.0
4	30.0	25.0
5	40.0	0.0
6	50.0	25.0
7	60.0	0.5
8	70.0	-25.0
9	80.0	0.0
10	90.0	25.0
11	100.0	0.0
12	110.0	25.0
13	120.0	0.0
14	130.0	25.0
15	140.0	0.0
16	150.0	25.0
17	160.0	0.0
18	170.0	25.0
19	180.0	0.0
20	190.0	25.0
21	200.0	0.0
22	210.0	24.5

23	220.0	0.0
24	230.0	25.0
25	240.0	0.0
26	250.0	25.0

3 [Acceleration (Normal)]



Num	Time (ms)	Acceleration (Normal) (g)
1	0.0	0.0
2	10.0	39.5
3	20.0	0.0
4	30.0	46.0
5	40.0	0.0
6	50.0	45.0
7	60.0	0.0
8	70.0	52.0
9	80.0	0.0
10	90.0	60.0
11	100.0	0.0
12	110.0	44.5
13	120.0	0.0
14	130.0	44.0
15	140.0	0.5
16	150.0	-60.0
17	160.0	0.0
18	170.0	52.5
19	180.0	0.0
20	190.0	45.0
21	200.0	0.0
22	210.0	55.0

23	220.0	0.0
24	230.0	49.5
25	240.0	0.0
26	250.0	50.5

< Real-time Data >

1 [Ignition cycle_download]

Num	Ignition cycle_download (Cyc.)
1	Invalid data

< Event # 1 - 1 >

```
07 DA 61 50 7F 00 00 00 7F 7F 7F 81 7F 7D 7C 7A 79 78 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 78 7F 83 86 8A 8E 91 93 95 96 97 99 9B 9C 9D 9E 9E 9F 9F 9F 9F 9F 9F A0 A0 A0 A0 A0 A0 A0 78 78
```

< Event # 1 - 2 >

```
07 DA 61 51 FF FF FF 3F 00 00 00 00 00 00 00 00 00 04 04 04 04 04 04 04 04 04 04 04
55 55 15 00 53 01 00 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 55 15 7F
7F 7F 7F 7F 7F 7F 7F 7F 7F 00 01 03 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

< Event # 1 - 3 >

[illegible]

< Real-time Data >

```
07 DA 61 D0 FF FF 0F 00 7D C4 7A FF FF FF FF FF FF FF FF 00 00 FF FF FF FF 00 00 FF FF
```

< Event # 2 - 1 >

```
07 DA 61 53 7F 00 00 00 7F 7F 80 81 7D 7C 7C 7A 78 78 77 77 77 77 77 77 77 77 77 77 77  
77 77 77 77 77 78 7F 8C 96 A3 AA B6 BC C0 C3 C7 CD D3 D7 DA DB DC DD DE DE DF E0 E2 E2 E2  
E1 E0 E2 78 78
```

< Event # 2 - 2 >

[illegible]

< Event # 2 - 3 >

[illegible]

00
00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

< Real-time Data >

07 DA 61 D0 FF FF 0F 00 7D C4 7A FF FF FF FF FF FF FF FF 00 00 FF FF FF FF 00 00 FF FF