Vehicle Research and Test Center

FMVSS 208 Dynamic Rollover

of a 2007 Ford Expedition

TRC Inc. Test Number 091118

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Final Report

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TRC TEST NUMBER: 091118

Report Approved by:

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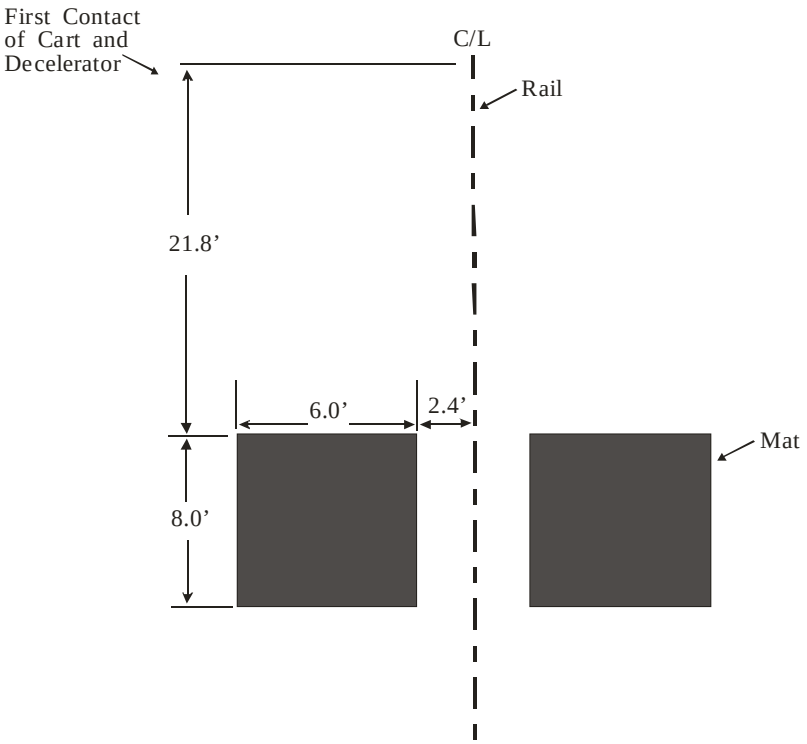
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SECTION 1

PURPOSE AND TEST PROCEDURE

This dynamic rollover crash test was conducted to investigate the dynamics of belted occupants during rollover crashes. This test was conducted with a modified 2007 Ford Expedition on the FMVSS 208 rollover cart moving at 48.4 km/h (30 mph), releasing the vehicle with its roll axis perpendicular to the direction of rollover cart motion, and first contacting the passenger's side. The vehicle was modified by replacing the rear seat with a modified front seat to simulate similar characteristics in both seating positions. The center console was also removed. The test vehicle contained three (3) instrumented Part 572E dummies. The OEM belts and buckles were replaced in all positions. The driver and left rear positions were equipped with a motorized retractor and a pretension buckle system[1]. The right front position was equipped with a retractor and buckle pretension system[1]. The curtain air bags and pretensioners were fired manually at 300ms into the event and the motorized retractors were manually activated prior to launch. It was conducted for the National Highway Traffic Safety Administration's (NHTSA) Vehicle Research and Test Center (VRTC) by the Transportation Research Center Inc. (TRC Inc.).

The test setup included installing two sections of rubber matting[2] at the impact area secured with adhesive to steel plates. The left and right sides are symmetrical.



[1] Belt systems were provided by TRW Automotive.
[2] Rubber matting provided by VRTC.

SECTION 2
SUMMARY OF TEST RESULTS

A 2007 Ford Expedition, containing three (3) instrumented Part 572E test dummies was placed upon the rollover test device at 23 degrees above the horizontal and was released at 48.4 km/h (30.0 mph). The device was attached to the tow cable of the drive system. The device was brought to a stop with water filled decelerator tubes. After release, the vehicle impacted the ground on its right side wheels. The vehicle skidded on its right side wheels and came to rest in an upright position. The dynamic rollover test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on November 18, 2009. Pre-test and post-test photographs of the test vehicle, the cart, and the dummies are included in Appendix A.

Three (3) restrained Part 572E Hybrid III 50th percentile adult male anthropomorphic test devices (dummies) were placed in the driver, right front, and left rear designated seating positions according to the placement procedures specified in Appendix F of Laboratory Procedure TP208-14. The dummies were instrumented with head, chest, and pelvis triaxial accelerometers, upper and lower six-axis neck load cells, and a chest deflection potentiometer. The ATDs in position (1) and (4) were also instrumented with triaxial head rotational rate gyroscopes. The ATD in position (3) was instrumented with six (6) additional head accelerometers to complete a 9-array head configuration. All dummies were restrained by 3-point seat belts. All dummy instrumentation is detailed in this report. Seventy-eight (78) dummy channels of acceleration, force, moment, roll rate, and displacement data were collected for this test. A total of 189 channels of data were recorded.

The rollover test was documented by one (1) real-time camera and fourteen (14) high-speed digital cameras. Camera locations and other pertinent camera information are included in this report.

Appendix A contains pre- & post-test photography. Appendix B contains the vehicle dummy response data traces. A summary of the front impact dummy configuration and verification test data can be found in Appendix C.

TEST RESULTS SUMMARY

	Left Front ATD(#001)	Right Front ATD(#110)	Left Rear ATD(#043)
HIC15 CFC 1000	4	17	7
HIC36 CFC 1000	9	23	16
Chest Clip 3 ms (g) CFC 180	4.8	8.8	7.3
Chest Deflection (mm) CFC 600	-0.7	-8.0	-4.5
Neck Injury (NIJ) (ms) CFC 600			
NTE	0.10	0.11	0.14
NTF	0.04	0.02	0.04
NCE	0.05	0.16	0.03
NCF	0.03	0.07	0.03
Neck Tension (N) CFC1000	410.8	476.2	381.5
Neck Compression (N) CFC1000	-153.5	-472.4	-109.5

	2007 Ford Expedition
Vehicle Test Weight	2916.5 kg
Left Side - Maximum Crush	---[1] mm
Right Side - Maximum Crush	---[1] mm
Roof - Maximum Crush	---[1] mm
Impact Speed	48.4 km/h

[1] Post-test measurements were not required due to the vehicle not rolling over. Crush measurements are not available.

TEST NOTES:

The right front dummy's head top X-axis acceleration data channel recorded no valid data throughout the event.

The vehicle's top of engine X-axis acceleration data channel exceeded the full scale value at 822 milliseconds and recorded questionable data thereafter.

The vehicle's top of engine Y-axis acceleration data channel exceeded the full scale value at 831 milliseconds; all data should be considered questionable.

The vehicle's right B-pillar upper Z-axis acceleration data channel exceeded the full scale value at 310 milliseconds; all data should be considered questionable.

The right front passenger's lap belt force data channel recorded questionable data throughout the event.

The right front passenger's shoulder belt force data channel exceeded the full scale value at 2072 milliseconds; all data should be considered questionable.

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

TEST VEHICLE INFORMATION AND OPTIONS

Make	Ford	Driver & Front Pass Front Airbag	Yes
Model Year	2007	Driver & Front Pass Side Airbag	Yes
Model	Expedition XLT	Driver & Front Pass Head Airbag	No
Body Style	4-door SUV	Driver & Front Pass Curtain Airbag[2]	Yes
		Driver & Front Pass Knee Airbag	No
VIN	1FMFU15587LA34152	Rear Pass. Front Airbag	Yes
Color	Tan	Rear Pass. Side Airbag	No
Delivery Date	10/27/09	Rear Pass. Head Airbag	No
Odometer Reading	50,321	Rear Pass. Curtain Airbag[2]	Yes
Dealer	---[1]	Rear Pass. Knee Airbag	No
Transmission	Automatic	Load Limiters	---[3]
Final Drive	Rear wheel drive	Anti-lock Brakes	Yes
Number of Cylinders	V8	All-Wheel Drive	No
Engine Displacement (L)	5.4	Pretensioners	---[3]
Engine Placement	Longitudinal	Air Conditioning	Yes
Roof Rack	Yes / Removed	Tilt Wheel	Yes
Sunroof / T-Top	No	Power Seats	Yes
Tinted Glass	Yes	Power Windows	Yes
Traction Control	No	Power Steering	Yes
Power Brakes	Yes	AM/FM CD	Yes
Front Disc	Yes	Automatic Door Locks	Yes
Rear Disc	Yes	Other	N/A
Does owner's manual provide instructions to turn off automatic door locks?			---[3]

DATA FROM CERTIFICATION LABEL

Manufactured by	Ford Motor Co.
Date of Manufacture	12/06

GVWR (kg)	3357
GAWR Front (kg)	1497
GAWR Rear (kg)	1928

TEST VEHICLE SEAT TYPE AND CAPACITY

Measured Parameter	Front	Mid[4]	Rear[4]	Total
Type of Seats	Bucket	Split Bench	Split Bench	
Designated Seating Capacity (DSC)	2	3	3	8
Type of Seat Back	Power Adjustable	Manual Adjustable	Fixed	
(A) Capacity Wt. (VCW) (kg)				777
(B) DSC x 68.08 kg				545
(A-B) Cargo Wt. (RCLW) (kg)				232

[1] Not Recorded

[2] The curtain airbags were manually fired for this test.

[3] Owner's manual not available at the time the report was prepared, information unknown.

[4] The original seats were removed. A bucket seat was installed in the second row for this test.

DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)[1]			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	642.6	637.0		689.0	776.0	
Right	kg	612.2	662.4		671.5	780.0	
Ratio	%	49.1	50.9		46.6	53.4	
Totals	kg	1254.8	1299.4	2554.2	1360.5	1556.0	2916.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
(A) Total Delivered Weight (UVW)	kg	2554.2[1]
(B) Weight of 2 P572M ATDs	kg	165.2[1]
(C) Rated Cargo/Luggage Weight (RCLW)	kg	136.0[1]
(A+B+C) Vehicle Target Weight (TVTW)	kg	2855.4[1]

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	900[2]	897[2]	897[2]	899[2]	1536
As Tested	mm	900	898	884	880	1611
Fully Loaded	mm	---[3]	---[3]	---[3]	---[3]	

GENERAL TEST VEHICLE DATA

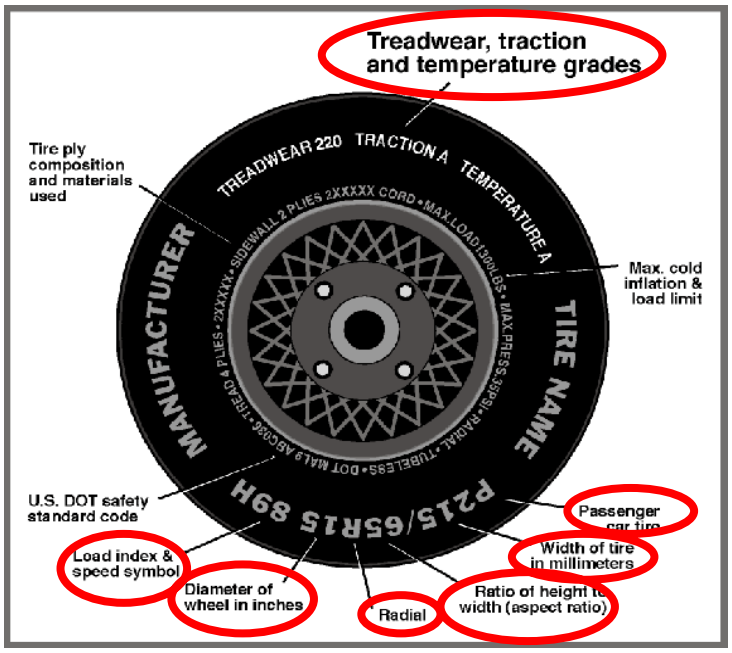
Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	3020.0
Total Vehicle Length at Left Side	mm	---[3]
Total Vehicle Length at Centerline	mm	5208.0
Total Vehicle Length at Right Side	mm	---[3]
Weight of Ballast in Cargo Area	kg	0.0
Weight of Vehicle Components Removed	kg	Not Recorded
Amount of Stoddard Solvent in Fuel Tank	liters	98.4

Vehicle parts removed to make Target Vehicle Test Weight: Spare tire and tail lights.

[1] UVW and Target Test Weight was based on values recorded using a 5-passenger (DSC) vehicle as tested on December 3, 2008.
[2] Matched test conducted October 22, 2009.
[3] Measurement not requested.

DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P265/70R17	P265/70R17
Tire Size on Vehicle	P245/70 R17	P245/70 R17
Tire Manufacturer	Continental	Continental
Tire Name	Contitrac	Contitrac
Load Index & Speed Symbol	113S	113S
Tread wear	520	520
Traction Grade	A	A
Temperature Grade	B	B

NOTE: Right rear tire flattened during the test.

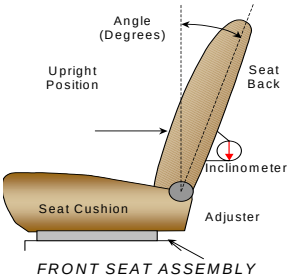
DATA SHEET NO. 2

SEATS AND SEAT BELTS DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

DUMMY RIDING POSITION



Driver: Total Number of detents: Power

Passenger: Total Number of detents: 22

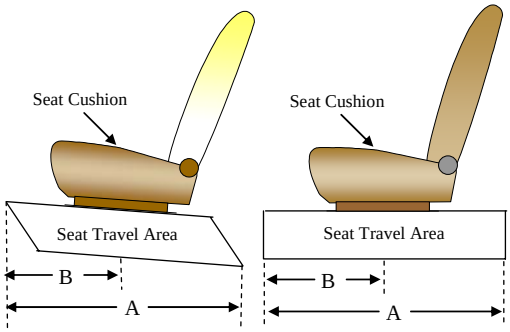
Driver seat back angle: 10.9°

Passenger seat back angle: 7.2°

Left Rear Passenger seat back angle: 12.3°

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger. Manual seat positions are numbered consecutively with the full forward position assigned as position number one.



SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	225	Mid
Fr Pass	205	Mid
Rear Seat	205	17 of 20

Seat position number one is the full forward position.

SEAT BELT UPPER ANCHORAGE

	Total No. of Positions	Placed in Position No.
Driver Seat	5	3
Fr Pass	5	3
Rear Seat	Fixed	Fixed

Position number one is the uppermost adjustment position.

Note: Vertical height adjusted to match head to roof measurement with left rear dummy.

DATA SHEET NO. 2 (CONTINUED)
SEATS AND SEAT BELTS DATA

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

SEAT BELT CONFIGURATION

	Type	Configuration
Driver	3-PT: Motorized Retractor[1] and Buckle Pretensioner[2]	I
Left Rear Passenger	3-PT: Motorized Retractor[1] and Buckle Pretensioner[2]	I
Front Passenger	3-PT: Retractor and Buckle Pretensioner[2]	G

[1] Motorized Retractor activated at launch of test
[2] Pretensioners manually fired at 300ms

DATA SHEET NO. 3

POST-TEST OBSERVATIONS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front Seat Driver	Right Front Passenger	Rear Seat Passenger
Dummy Type / Serial No.	Hybrid III 50th / 001	Hybrid III 50th / 110	Hybrid III 50th / 043
Head Contact	Curtain airbag	Head restraint, Curtain airbag	Headliner
Upper Torso Contact	No visible contact	No visible contact	No visible contact
Lower Torso Contact	No visible contact	No visible contact	No visible contact
Left Knee Contact	No visible contact	No visible contact	No visible contact
Right Knee Contact	No visible contact	No visible contact	No visible contact

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Unlocked	Unlocked
Left Side Door Opening	Closed and Latched	Closed and Latched
Right Side Door Opening	Closed and Latched	Closed and Latched
Seat Movement	None	None
Seat Back Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Did not separate from vehicle
Sill Separation	Did not separate from vehicle
Windshield Damage	None
Window Damage	None
Other Notable Effects	None

DATA SHEET NO. 3 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Right Front (Passenger) Occupant Location 03	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	Yes	No
Side Airbag	Yes	No	Yes	No
Head Airbag	No	N/A	No	N/A
Curtain Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Unknown	Unknown	Unknown	Unknown

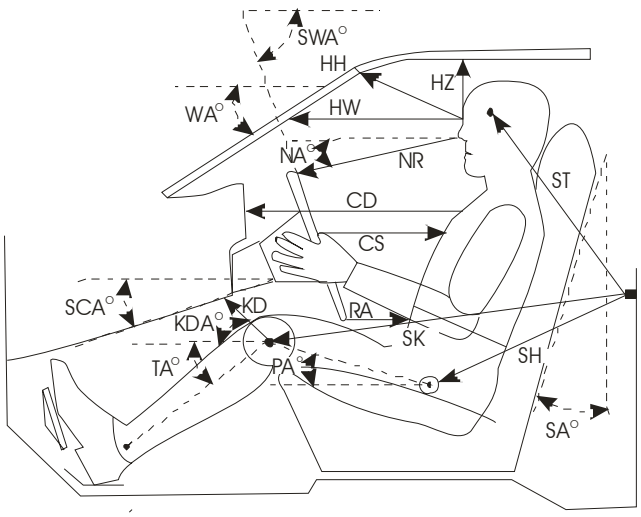
Restraint Type	Left Rear (Passenger) Occupant Location 04	
	Installed	Operation
Front Airbag	No	N/A
Side Airbag	No	N/A
Head Airbag	No	N/A
Curtain Airbag	Yes	Yes
Seat Belt Pretensioner	Yes	Yes
Seat Belt Load Limiter	Unknown	Unknown

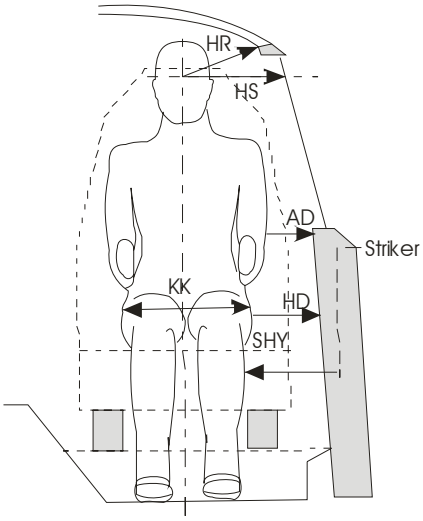
NOTE: TRC Inc. remotely deployed the driver and front passenger seat belt buckle pretensioners, the left rear passenger inner buckle and retractor pretensioners, and the left and right side curtain airbags at 300 ms.

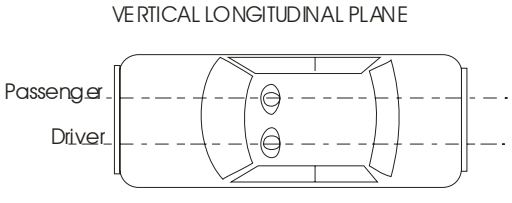
DATA SHEET NO. 4
DUMMY MEASUREMENTS

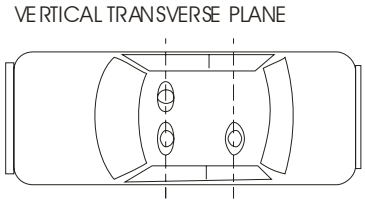
Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09









DATA SHEET NO. 4 (CONTINUED)
DUMMY MEASUREMENTS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

FRONT SEAT OCCUPANTS

Code	Measurement Description	Driver (# 001)		Passenger (# 110)	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		30.7		
SWA°	Steering Wheel Angle		---[1]		
SCA°	Steering Column Angle		---[1]		
SA°	Seat Back Angle (on headrest post)		10.9		7.2
HZ	Head to Roof (Z Direction)	252		224	
HH	Head to Header	441		427	
HW	Head to Windshield	714		670	
HR	Head to Side Header (Y Direction)	246		233	
NR	Nose to Rim	---[1]	---[1]		
CD	Chest to Dash	497		569	
CS	Steering Wheel to Chest	---[1]			
RA	Rim to Abdomen	---[1]			
KDL	Left Knee to Dash	189	14.7	158	
KDR	Right Knee to Dash	202	13.2	180	6.9
PA°	Pelvic Angle		23.1		---[2]
TA°	Tibia Angle		---[2]		51.4
KK	Knee to Knee (Y Direction)	---[2]		276	
ST	Striker to Head	---[2]	---[2]	672	-81.3
SK	Striker to Knee	---[2]	---[2]	604	-8.8
SH	Striker to H-Point	209	---[2]	208	1.3
SHY	Striker to H-Point (Y Direction)	34		173	
HS	Head to Side Window (Y Direction)	323		332	
HD	H-Point to Door (Y Direction)	84		82	
AD	Arm to Door (Y Direction)	144		153	

The seat back angle (SA°) is measured relative to vertical; all other angles are measured relative to horizontal.
A negative angle indicates the measurement point was above the striker.

[1] Measurement is not available, steering column was removed pre-test.
[2] Measurement is not available.

DATA SHEET NO. 4 (CONTINUED)
DUMMY MEASUREMENTS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

LEFT REAR SEAT OCCUPANT

Code	Measurement Description	Left Rear Passenger (#043)	
		Length (mm)	Angle (°)
WAº	Windshield Angle		
SWAº	Steering Wheel Angle		
SCAº	Steering Column Angle		
SAº	Seat Back Angle (on headrest post)		12.3
HZ	Head to Roof (Z Direction)	251	
HH	Head to Header	606	
HW	Head to Windshield		
HR	Head to Side Header (Y Direction)	235	
NR	Nose to Rim		
CD	Chest to Dash	---[1]	
CS	Steering Wheel to Chest		
RA	Rim to Abdomen		
KDL	Left Knee to Dash (Seatback)	---[1]	---[1]
KDR	Right Knee to Dash (Seatback)	---[1]	
PAº	Pelvic Angle		25.3
TAº	Tibia Angle		---[1]
KK	Knee to Knee (Y Direction)	---[1]	
ST	Striker to Head	---[1]	---[1]
SK	Striker to Knee	---[1]	---[1]
SH	Striker to H-Point	304	---[1]
SHY	Striker to H-Point (Y Direction)	135	
HS	Head to Side Window (Y Direction)	341	
HD	H-Point to Door (Y Direction)	92	
AD	Arm to Door (Y Direction)	160	

A negative angle indicates the measurement point was above the striker.

[1] Measurement not available.

DATA SHEET NO. 5

OCCUPANT INSTRUMENTATION DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

LEFT FRONT

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
Head Acceleration	X	g	1.8	305.4	-3.1	1949.2
	Y	g	5.7	923.4	-8.3	1108.2
	Z	g	9.0	307.6	-3.6	886.6
	R	g	9.6	1097.5		
Head Rate Gyro	X	°/s	792.8	1189.0	-737.2	1067.4
	Y	°/s	532.6	1901.3	-371.1	1767.4
	Z	°/s	374.9	2499.6	-263.6	975.6
Upper Neck Force	X	N	62.3	1819.8	-111.6	1941.4
	Y	N	159.1	922.2	-334.6	1107.7
	Z	N	410.7	308.0	-153.5	891.0
Upper Neck Moment	X	Nm	8.2	937.8	-15.7	1109.6
	Y	Nm	7.3	1939.8	-7.8	1844.1
	Z	Nm	8.3	945.9	-7.5	1115.5
Chest Acceleration	X	g	1.6	315.0	-8.3	306.2
	Y	g	2.0	1346.2	-4.8	1739.4
	Z	g	4.8	307.0	-3.7	902.8
	R	g	9.4	306.2		
Chest Displacement	X	mm	5.1	308.5	-0.7	2400.5
Lower Neck Force	X	N	1102.7	925.2	-2611.1	1105.0
	Y	N	943.2	1638.4	-982.3	307.7
	Z	N	1008.0	950.9	-1310.8	2390.8
Lower Neck Moment	X	Nm	4.8	1824.4	-5.2	1955.1
	Y	Nm	5.4	921.0	-13.9	1093.5
	Z	Nm	3.8	307.7	-1.9	892.0
Pelvis Acceleration	X	g	2.2	869.4	-5.0	305.8
	Y	g	2.7	310.6	-3.8	431.6
	Z	g	4.8	305.0	-3.6	896.6
	R	g	7.1	305.3		

Positive Direction
Longitudinal: Forward
Lateral: Rightward
Vertical: Downward

Negative Direction
Longitudinal: Rearward
Lateral: Leftward
Vertical: Upward

DATA SHEET NO. 5 (CONTINUED)
OCCUPANT INSTRUMENTATION DATA

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

RIGHT FRONT

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
Head Acceleration	X	g	2.7	327.1	-5.5	2351.7
	Y	g	3.8	959.4	-17.8	1042.7
	Z	g	8.4	308.5	-6.4	1713.9
	R	g	18.2	1043.3		
Head Front Acceleration	Y	g	3.9	966.3	-13.3	1053.8
	Z	g	9.9	308.5	-5.9	1712.6
Head Top Acceleration[1]	X	g	0.6	306.6	-1.5	303.3
	Y	g	4.6	950.8	-25.6	1041.8
Head Side Acceleration	X	g	4.1	1036.2	-8.9	1063.8
	Z	g	8.8	308.5	-6.1	1712.5
Upper Neck Force	X	N	693.6	1701.0	-171.1	1701.4
	Y	N	213.2	1078.7	-772.0	1701.0
	Z	N	476.2	307.8	-472.5	1064.2
Upper Neck Moment	X	Nm	14.9	1725.3	-5.1	1104.2
	Y	Nm	6.0	2912.8	-14.7	1055.4
	Z	Nm	4.9	1188.2	-18.5	1069.8
Lower Neck Force	X	N	197.9	307.4	-105.2	2904.1
	Y	N	163.2	1756.2	-218.5	1037.7
	Z	N	577.7	307.7	-426.5	1714.4
Lower Neck Moment	X	Nm	36.8	959.2	-39.1	1038.6
	Y	Nm	37.2	1069.0	-47.9	307.8
	Z	Nm	8.2	1185.7	-10.5	312.2
Chest Acceleration	X	g	2.9	317.4	-7.4	307.4
	Y	g	2.8	308.8	-6.2	1728.1
	Z	g	4.8	307.2	-7.0	1018.6
	R	g	9.0	307.4		
Chest Displacement	X	mm	3.3	1748.2	-8.0	313.0
Pelvis Acceleration	X	g	2.6	1000.5	-6.2	305.4
	Y	g	2.1	304.6	-4.3	1742.6
	Z	g	4.9	304.6	-7.3	1023.0
	R	g	7.9	305.3		

Positive Direction
Longitudinal: Forward
Lateral: Rightward
Vertical: Downward

Negative Direction
Longitudinal: Rearward
Lateral: Leftward
Vertical: Upward

[1] See Test Notes.

DATA SHEET NO. 5 (CONTINUED)
OCCUPANT INSTRUMENTATION DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

LEFT REAR

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
Head Acceleration	X	g	1.5	417.0	-2.8	2512.4
	Y	g	4.7	1909.4	-8.0	1096.8
	Z	g	9.9	1761.4	-2.5	884.8
	R	g	12.3	1766.2		
Head Rate Gyro	X	°/s	926.1	1872.3	-874.9	1745.7
	Y	°/s	533.9	1876.6	-545.9	1748.2
	Z	°/s	268.0	2484.2	-334.9	1096.2
Upper Neck Force	X	N	63.9	446.6	-109.7	2512.3
	Y	N	194.6	1909.5	-305.3	1787.8
	Z	N	381.5	1759.9	-109.5	885.4
Upper Neck Moment	X	Nm	10.6	1907.1	-14.8	1776.3
	Y	Nm	7.2	2521.5	-12.4	1774.9
	Z	Nm	5.4	1909.5	-7.5	1127.8
Chest Acceleration	X	g	2.3	1735.5	-4.0	307.1
	Y	g	2.2	1301.4	-6.5	1721.3
	Z	g	4.8	1772.5	-3.1	1726.3
	R	g	7.3	1724.0		
Chest Displacement	X	mm	5.8	2378.2	-4.5	309.4
Lower Neck Force	X	N	1314.9	1910.6	-2593.5	1782.6
	Y	N	750.9	1625.8	-1003.6	1760.5
	Z	N	766.7	2512.6	-1174.6	471.0
Lower Neck Moment	X	Nm	8.1	1753.0	-3.7	1621.2
	Y	Nm	4.7	1912.1	-17.6	1775.0
	Z	Nm	3.1	308.6	-1.4	900.2
Pelvis Acceleration	X	g	1.9	1718.1	-5.2	307.0
	Y	g	1.8	2429.2	-5.0	1714.8
	Z	g	6.9	305.9	-6.4	307.3
	R	g	9.3	306.9		

Positive Direction
Longitudinal: Forward
Lateral: Rightward
Vertical: Downward

Negative Direction
Longitudinal: Rearward
Lateral: Leftward
Vertical: Upward

DATA SHEET NO. 6
VEHICLE STRUCTURAL MEASUREMENTS[1, 2]

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

STRUCTURAL MEASUREMENTS

	Elements	Pre-Test
1	Total Length	5208
2	Total Width	2007
3	Bumper Top Height	498
4	Bumper Bottom Height	428
5	Longitudinal Member Top Height	523
6	Longitudinal Member Bottom Height	393
7	Distance Between Longitudinal Members	871
7´	Longitudinal Member Width	100
8	Engine Top Height	1172
9	Engine Bottom Height	285
10	Engine and Gearbox Width	750
11	Front Bumper - Engine Distance	775
12	Front Shock Absorber Fixing Height	824
13	Bonnet Leading Edge Height	1084
14	Front Shock Absorber Fixing Width	920
15	Front Bumper - Front Axle Distance	---[3]
16	Front Axle - A Pillar Distance	680
17	A Pillar - B Pillar Distance	1070
18	B Pillar - Rear Axle Distance	1285
19	B Pillar - C Pillar Distance	1000
20	Roof Sill Bottom Height	1658
21	Roof Sill Top Height	1797
22	Floor Sill Bottom Height	497
23	Floor Sill Top Height	550

All distance measurements are in millimeters.

[1] Taken from INSIA report, "Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body", March 1999.

[2] The vertical measurements from the ground are adjusted based on the test vehicle's pre-test attitude measurements.

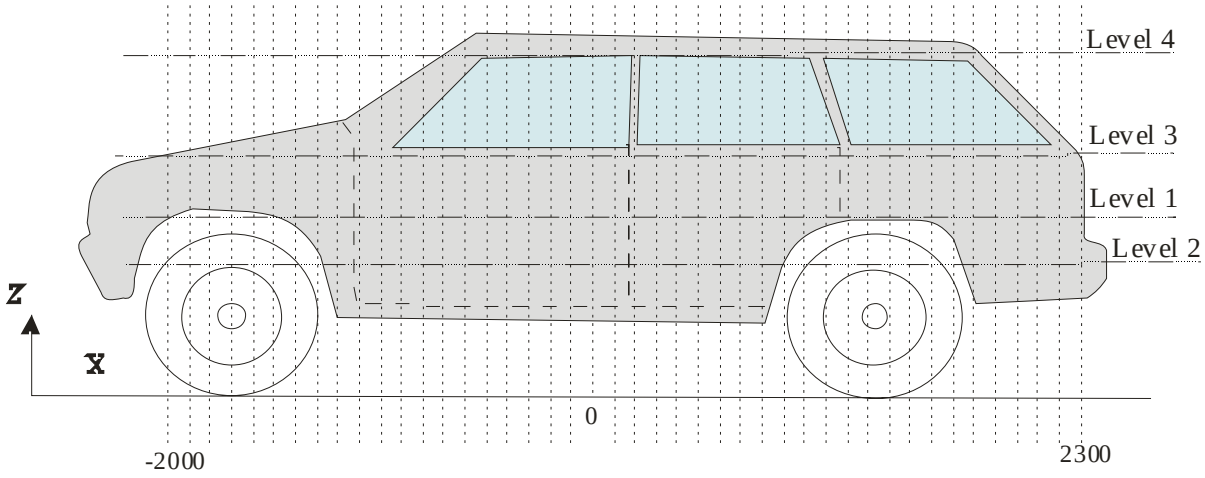
[3] Measurement was not recorded.

DATA SHEET NO. 7

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09



Left Side View

All measurements are in millimeters

Measurements are taken when the vehicle is in the "As Tested" configuration.

Measurements along the vertical 0 mm line shown above.

Horizontal measurement spacing is 100 millimeters.

Level	Measurement Description	Height Above Ground (mm)
4	Window Top	1780
3	Window Sill	1140
2	Occupant H-Point	830
1	Mid Door	920

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

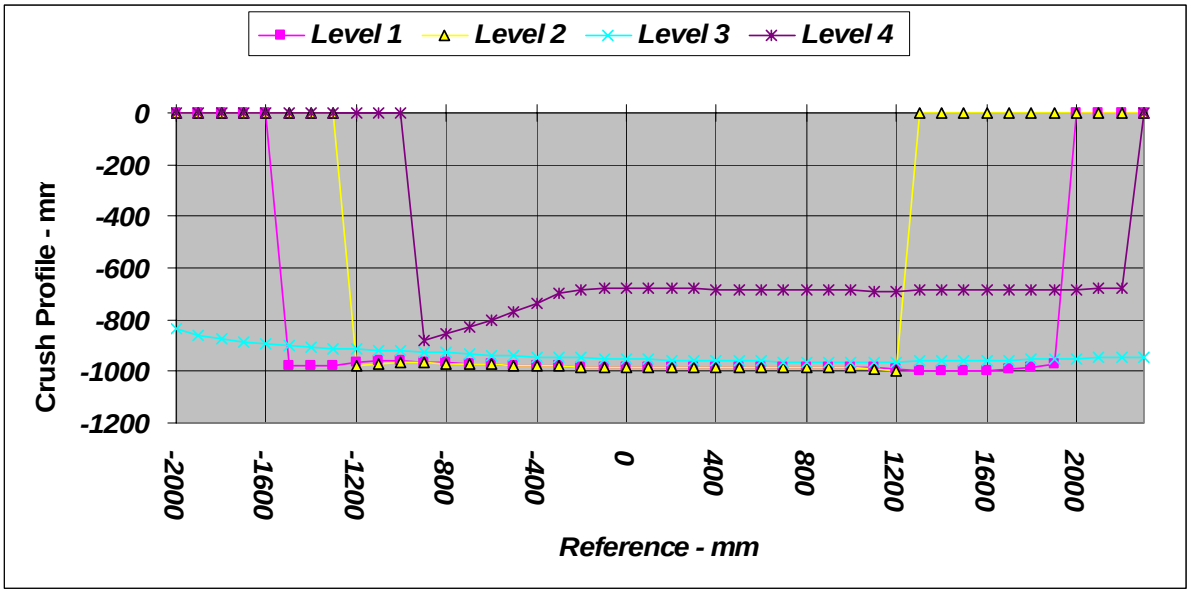
LEFT SIDE CRUSH[1]

	Pre-Test				Post-Test				Difference			
	1	2	3	4	1	2	3	4	1	2	3	4
-2000			-837									
-1900			-859									
-1800			-875									
-1700			-886									
-1600			-895									
-1500	-975		-902									
-1400	-977		-907									
-1300	-975		-912									
-1200	-967	-978	-916									
-1100	-959	-972	-920									
-1000	-960	-964	-922									
-900	-963	-965	-925	-883								
-800	-967	-969	-929	-852								
-700	-970	-972	-933	-827								
-600	-973	-974	-936	-800								
-500	-976	-977	-940	-769								
-400	-978	-979	-943	-736								
-300	-981	-981	-946	-699								
-200	-982	-982	-948	-685								
-100	-983	-984	-950	-681								
0	-985	-985	-953	-680								
100	-986	-986	-954	-679								
200	-987	-986	-956	-678								
300	-987	-986	-957	-680								
400	-987	-986	-958	-682								
500	-987	-986	-960	-683								
600	-987	-986	-961	-684								
700	-987	-986	-962	-685								
800	-987	-986	-962	-685								
900	-987	-985	-963	-686								
1000	-986	-984	-963	-688								
1100	-986	-992	-962	-689								
1200	-994	-996	-962	-689								
1300	-999		-960	-688								
1400	-1000		-960	-688								
1500	-999		-959	-687								
1600	-997		-958	-687								
1700	-993		-956	-686								
1800	-985		-955	-685								
1900	-973		-953	-683								
2000			-950	-682								
2100			-948	-680								
2200			-946	-678								
2300			-944									

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

LEFT SIDE CRUSH[1]



[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

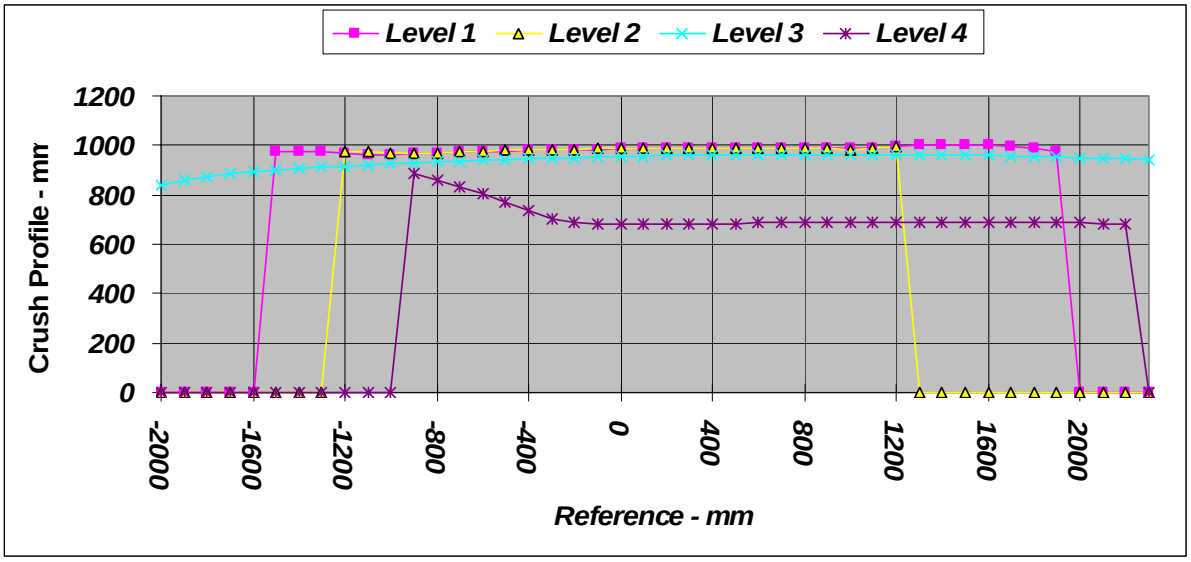
RIGHT SIDE CRUSH[1]

	Pre-Test				Post-Test				Difference			
	1	2	3	4	1	2	3	4	1	2	3	4
-2000			836									
-1900			857									
-1800			873									
-1700			884									
-1600			893									
-1500	974		900									
-1400	976		907									
-1300	976		912									
-1200	969	977	916									
-1100	961	973	921									
-1000	962	965	925									
-900	965	967	928	889								
-800	969	970	933	857								
-700	972	974	937	831								
-600	975	976	940	803								
-500	978	979	943	772								
-400	980	981	946	739								
-300	982	983	948	704								
-200	984	984	951	689								
-100	985	986	953	685								
0	986	986	955	683								
100	987	987	957	682								
200	988	988	958	683								
300	987	986	958	682								
400	988	986	960	684								
500	988	987	961	685								
600	988	987	962	686								
700	988	987	963	686								
800	987	986	963	687								
900	987	986	963	687								
1000	987	985	963	689								
1100	987	992	963	689								
1200	994	997	961	689								
1300	1002		960	689								
1400	1002		961	689								
1500	1001		960	689								
1600	999		958	689								
1700	996		956	688								
1800	988		955	688								
1900	976		953	687								
2000			950	686								
2100			948	685								
2200			945	683								
2300			942									

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

RIGHT SIDE CRUSH[1]



[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

B-PILLAR MEASUREMENTS[1]

Index	Pre-Test			Post-Test			Difference		
Left B-Pillar	X (mm)	Y (mm)	Z (mm)	X (mm)	Y (mm)	Z (mm)	X (mm)	Y (mm)	Z (mm)
(1)	2475.2	-669.5	-1114.0						
(2)	2485.4	-726.9	-1038.0						
(3)	2491.5	-770.8	-948.0						
(4)	2495.2	-809.8	-854.9						
(5)	2499.2	-842.1	-760.1						
(6)	2502.7	-864.6	-662.6						
(7)	2505.2	-876.2	-562.7						
(8)	2503.0	-879.5	-465.9						
Right B-Pillar									
(1)	2483.5	670.0	-1114.5						
(2)	2483.5	730.3	-1035.4						
(3)	2488.5	773.9	-946.3						
(4)	2492.2	813.0	-852.8						
(5)	2495.2	845.1	-758.0						
(6)	2497.0	867.8	-659.6						
(7)	2501.2	878.5	-563.1						
(8)	2506.0	881.6	-467.5						

C-PILLAR MEASUREMENTS[1]

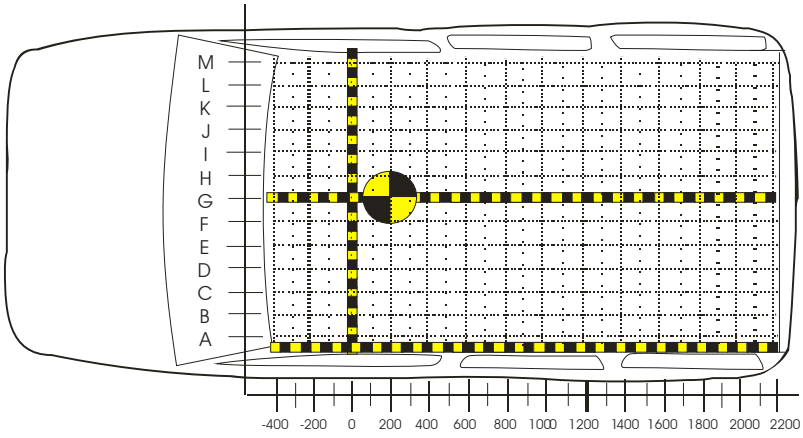
Index	Pre-Test			Post-Test			Difference		
Left C-Pillar	X (mm)	Y (mm)	Z (mm)	X (mm)	Y (mm)	Z (mm)	X (mm)	Y (mm)	Z (mm)
(1)	1558.5	-710.5	-1140.2						
(2)	1527.5	-758.9	-1057.5						
(3)	1495.1	-801.0	-973.1						
(4)	1462.5	-839.3	-884.1						
(5)	1429.4	-873.2	-795.2						
(6)	1397.3	-905.1	-702.1						
(7)	1365.5	-934.1	-610.3						
(8)	1333.8	-959.4	-521.2						
Right C-Pillar									
(1)	1570.2	712.5	-1140.6						
(2)	1538.8	758.2	-1062.9						
(3)	1505.2	800.8	-976.8						
(4)	1473.5	838.8	-889.1						
(5)	1442.3	873.7	-799.8						
(6)	1409.9	905.2	-709.3						
(7)	1377.7	933.8	-619.7						
(8)	1344.0	960.2	-529.1						

[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09



ROOF EXTERIOR CRUSH LEFT (ROWS A – D) [1]

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
-400	-602	-499	-395	-299								
-300	-604	-502	-400	-300								
-200	-602	-502	-401	-303								
-100	-602	-502	-403	-302								
0	-603	-502	-402	-302								
100	-601	-503	-402	-301								
200	-604	-504	-403	-300								
300	-604	-505	-403	-300								
400	-603	-507	-404	-302								
500	-602	-509	-405	-301								
600	-601	-510	-406	-301								
700	-602	-512	-408	-301								
800	-601	-513	-408	-301								
900	-600	-513	-408	-302								
1000	-601	-512	-408	-301								
1100	-600	-514	-408	-302								
1200	-602	-514	-408	-302								
1300	-601	-514	-408	-303								
1400	-601	-514	-408	-306								
1500	-600	-515	-404	-302								
1600	-602	-514	-405	-302								
1700	-603	-514	-404	-302								
1800	-601	-517	-402	-301								
1900	-601	-516	-404	-302								
2000	-600	-516	-404	-301								
2100	-600	-516	-405	-301								
2200	-601	-514	0	-300								

[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

ROOF EXTERIOR CRUSH CENTER (ROWS E – I) [1]

	Pre-Test					Post-Test					Difference				
	E	F	G	H	I	E	F	G	H	I	E	F	G	H	I
-400	-200	-99	-1	97	196										
-300	-200	-100	-0	98	198										
-200	-200	-96	-1	98	198										
-100	-201	-96	-0	97	198										
0	-200	-99	-0	96	197										
100	-199	-94	1	96	199										
200	-200	-97	2	98	200										
300	-201	-93	2	98	201										
400	-200	-96	2	98	203										
500	-200	-96	4	98	203										
600	-201	-97	4	99	204										
700	-202	-96	4	99	204										
800	-203	-93	5	99	205										
900	-203	-95	5	100	204										
1000	-204	-95	6	101	203										
1100	-204	-95	7	101	204										
1200	-204	-94	4	101	205										
1300	-205	-98	4	102	204										
1400	-207	-96	3	101	204										
1500	-207	-94	3	101	205										
1600	-208	-91	2	101	204										
1700	-209	-92	2	100	204										
1800	-208	-92	3	101	202										
1900	-210	-92	2	100	203										
2000	-212	-93	2	100	203										
2100	-211	-98	-0	99	204										
2200	-210	-100	-2	98	204										

[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

ROOF EXTERIOR CRUSH RIGHT (ROWS J – M) [1]

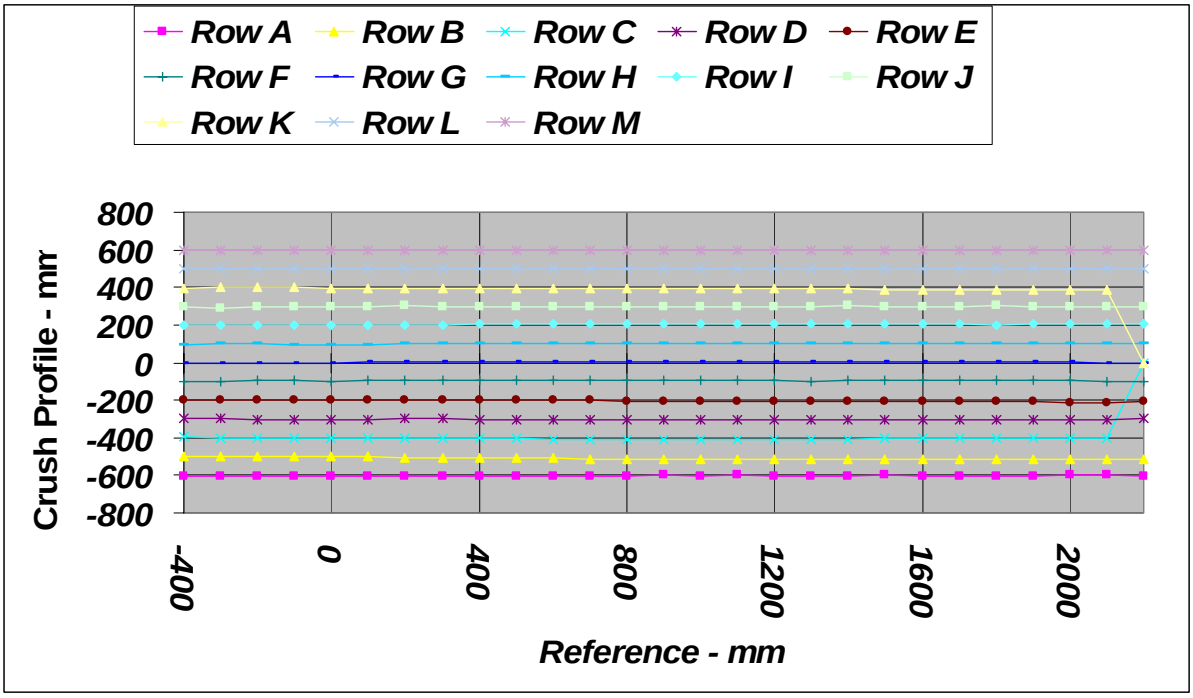
	Pre-Test				Post-Test				Difference			
	J	K	L	M	J	K	L	M	J	K	L	M
-400	295	395	496	598								
-300	291	399	499	596								
-200	296	399	498	597								
-100	297	399	498	597								
0	299	398	496	597								
100	299	396	496	596								
200	301	397	497	596								
300	300	396	497	597								
400	298	396	496	596								
500	298	396	496	596								
600	297	396	497	595								
700	297	395	496	595								
800	296	395	497	596								
900	298	395	496	596								
1000	298	394	496	596								
1100	300	394	497	596								
1200	299	392	497	597								
1300	300	392	498	595								
1400	301	391	497	595								
1500	299	390	498	596								
1600	299	390	498	596								
1700	299	388	497	596								
1800	301	387	498	596								
1900	300	386	498	595								
2000	300	387	499	596								
2100	299	387	498	596								
2200	297	0	499	599								

[1] Due to the vehicle not rolling over, no post test measurements were performed.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2007 Ford Expedition
Test Program: Dynamic Rollover Test Date: 11/18/09

ROOF CRUSH[1]



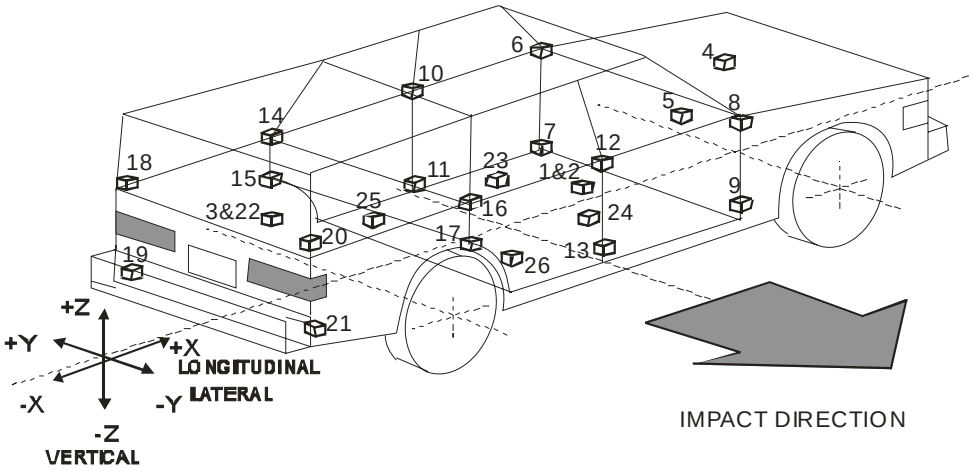
[1] Due to the vehicle not rolling over, no post-test measurements were performed.

DATA SHEET NO. 8

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09



Location No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Vehicle Center of Gravity	----	----	-
2	Vehicle Center of Gravity ROLL	----	----	-
3	Rear Deck (cargo area) ROLL	380	-20	-
4	Top of Engine	4360	-170	-
5	Bottom of Engine	4040	0	-
6	Left A-Pillar Upper	3052	635	-
7	Left A-Pillar Lower	3570	820	-
8	Right A-Pillar Upper	3060	-635	-
9	Right A-Pillar Lower	3570	-820	-
10	Left B-Pillar Upper	2510	657	-
11	Left B-Pillar Lower	2475	835	-
12	Right B-Pillar Upper	2500	-657	-
13	Right B-Pillar Lower	2466	-835	-
14	Left C-Pillar Upper	1670	672	-
15	Left C-Pillar Lower	1790	800	-
16	Right C-Pillar Upper	1675	-672	-
17	Right C-Pillar Lower	1795	-800	-
18	Left D-Pillar Upper	510	610	-
19	Left D-Pillar Lower	315	735	-
20	Right D-Pillar Upper	520	-610	-
21	Right D-Pillar Lower	310	-735	-
22	Vehicle Rear Deck	380	0	-
23	LF Seat Position (on floor)	2713	420	-
24	RF Seat Position (on floor)	2713	-420	-
25	LR Seat Position (on floor)	1888	440	-
26	RR Seat Position (on floor)	1888	-440	-

DATA SHEET NO. 8 (CONTINUED)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
(1) Vehicle Center of Gravity Acceleration	X	g	8.7	306.8	-7.2	311.9
	Y	g	5.0	306.9	-4.7	1680.8
	Z	g	8.8	316.2	-10.7	303.3
	R	g	11.4	303.1		
(2) Vehicle Center of Gravity Gyro	X	°/s	353.3	304.6	-579.6	307.7
	Y	°/s	448.7	308.0	-693.9	303.3
	Z	°/s	296.0	306.7	-629.5	303.8
(3) Rear Deck Gyro (cargo area)	X	°/s	643.0	1698.5	-418.6	1705.3
	Y	°/s	505.6	1704.6	-563.3	1704.2
	Z	°/s	587.0	1704.6	-591.7	1703.3
(4) Top of Engine[1]	X	g	331.7	1661.3	-2149.0	831.4
	Y	g	166.5	1798.3	-2111.1	834.7
	Z	g	303.0	2318.0	-271.6	1721.9
	R	g	2988.7	834.6		
(5) Bottom of Engine	X	g	1.6	1027.4	-3.1	1705.8
	Y	g	209.4	2296.4	-205.4	1775.7
	Z	g	3.2	61.7	-2.4	1650.5
	R	g	209.4	2296.4		
(6) Left A-Pillar Upper	X	g	2.3	310.9	-19.0	302.6
	Y	g	2.7	64.6	-7.5	303.5
	Z	g	6.4	1699.8	-4.2	302.5
	R	g	20.6	302.7		
(7) Left A-Pillar Lower	X	g	1.1	316.8	-1.2	1702.0
	Y	g	5.1	66.2	-4.1	1679.2
	Z	g	5.9	1694.6	-4.0	884.4
	R	g	6.6	66.3		
(8) Right A-Pillar Upper[1]	X	g	5.1	1690.1	-5.8	316.9
	Y	g	4.9	303.3	-8.0	315.4
	Z	g	3.5	847.4	-9.5	1690.3
	R	g	11.0	1690.2		
(9) Right A-Pillar Lower	X	g	1.3	315.1	-1.6	2306.4
	Y	g	5.1	63.8	-3.5	414.2
	Z	g	3.0	109.4	-9.0	1690.9
	R	g	9.5	1690.6		

1 See Test Notes

DATA SHEET NO. 8 (CONTINUED)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
(10) Left B-Pillar Upper	X	g	5.7	303.2	-3.8	318.1
	Y	g	23.7	302.2	-7.6	1713.8
	Z	g	9.7	305.8	-4.0	882.2
	R	g	24.2	302.2		
(11) Left B-Pillar Lower	X	g	1.1	315.8	-1.3	1702.0
	Y	g	3.3	73.1	-8.6	308.6
	Z	g	5.1	71.0	-4.1	883.7
	R	g	9.0	308.5		
(12) Right B-Pillar Upper	X	g	4.3	311.5	-40.2	302.9
	Y	g	10.8	311.0	-25.9	302.1
	Z	g	2167.8	313.4	-493.6	430.8
	R	g	2167.8	313.4		
(13) Right B-Pillar Lower	X	g	1.4	317.3	-2.3	305.6
	Y	g	4.5	324.5	-44.8	305.4
	Z	g	2.8	867.7	-11.5	1681.0
	R	g	44.9	305.4		
(14) Left C-Pillar Upper	X	g	2.9	1708.2	-25.0	304.2
	Y	g	120.9	305.9	-11.9	1701.1
	Z	g	8.8	309.4	-3.8	880.9
	R	g	122.4	305.8		
(15) Left C-Pillar Lower	X	g	2.4	1710.2	-1.9	327.7
	Y	g	6.3	65.8	-6.4	309.4
	Z	g	4.3	309.2	-3.8	883.5
	R	g	7.7	309.4		
(16) Right C-Pillar Upper	X	g	2.2	93.1	-9.4	309.0
	Y	g	12.6	1679.8	-29.1	309.2
	Z	g	7.6	312.7	-27.2	308.5
	R	g	39.8	308.9		
(17) Right C-Pillar Lower	X	g	2.9	1685.4	-3.5	1681.3
	Y	g	3.4	65.6	-3.2	1703.0
	Z	g	4.7	312.4	-17.3	1679.4
	R	g	17.5	1679.5		
(18) Left D-Pillar Upper	X	g	3.8	994.6	-9.7	303.2
	Y	g	3.7	87.4	-12.3	1711.3
	Z	g	3.9	331.9	-46.2	995.3
	R	g	47.1	995.3		

DATA SHEET NO. 8 (CONTINUED)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09

Location		Unit	Positive Direction Max.	Positive Direction Time (ms)	Negative Direction Max.	Negative Direction Time (ms)
(19) Left D-Pillar Lower	X	g	2.2	1006.2	-1.9	323.6
	Y	g	1.7	67.0	-6.5	1695.4
	Z	g	2.9	137.3	-6.6	1716.2
	R	g	9.1	1695.5		
(20) Right D-Pillar Upper	X	g	2.3	1690.3	-2.0	317.9
	Y	g	6.2	309.3	-65.2	302.2
	Z	g	4.0	1541.0	-16.5	1683.8
	R	g	65.2	302.2		
(21) Right D-Pillar Lower	X	g	2.1	1680.2	-2.6	1698.2
	Y	g	1.6	68.3	-6.2	2316.3
	Z	g	3.6	1543.8	-15.9	1683.8
	R	g	16.1	1683.8		
(22) Vehicle Rear Deck	X	g	1.6	318.6	-1.3	325.4
	Y	g	2.5	67.0	-5.6	1693.7
	Z	g	2.8	316.2	-11.8	1696.5
	R	g	12.6	1696.5		
(23) LF Seat Position (on floor)	X	g	220.7	1756.2	-202.7	1686.9
	Y	g	3.8	64.2	-3.8	1676.9
	Z	g	8.2	314.4	-6.2	304.2
	R	g	220.7	1756.2		
(24) RF Seat Position (on floor)	X	g	1.6	316.2	-2.2	1700.5
	Y	g	3.8	64.6	-4.1	1676.7
	Z	g	9.1	307.2	-10.4	302.8
	R	g	10.4	302.8		
(25) LR Seat Position (on floor)	X	g	313.0	475.6	-96.9	1702.9
	Y	g	3.4	64.6	-4.0	1675.7
	Z	g	7.5	306.8	-6.0	303.2
	R	g	313.0	475.6		
(26) RR Seat Position (on floor)	X	g	1.6	316.7	-2.9	1699.8
	Y	g	3.3	65.0	-4.6	1675.8
	Z	g	3.8	308.8	-11.4	1678.1
	R	g	12.0	1678.0		

Reference: X: + Forward from rear bumper
Y: + Rightward from vehicle centerline
Z: + Downward from ground level

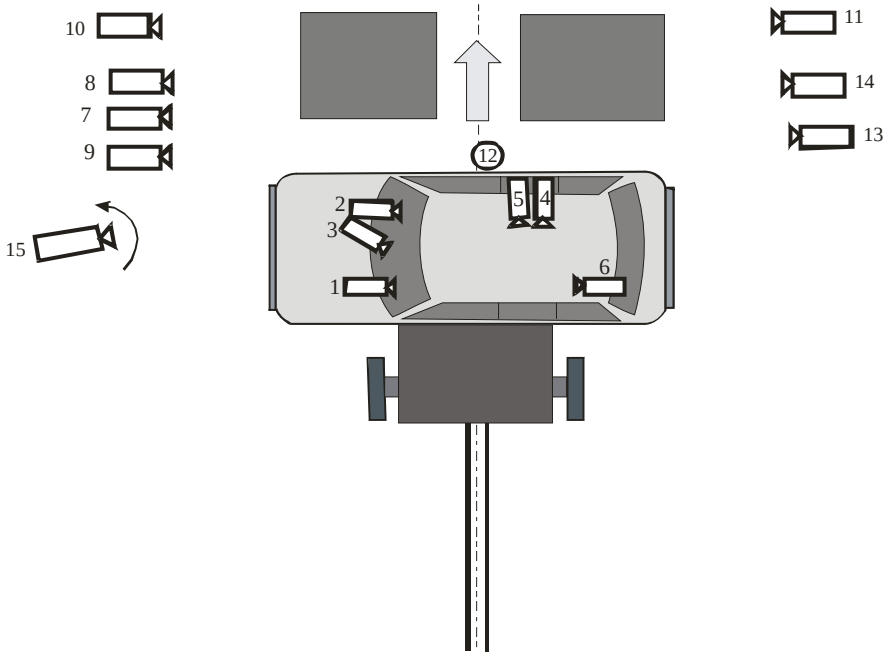
For acceleration data sign convention see Report Sign Convention in Appendix D.

DATA SHEET NO. 9

HIGH-SPEED CAMERA DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09



No.	Camera View	Camera Type	Lens (mm)	Speed (fps)	Trigger Delay (ms)
1	Driver Overall - Onboard	VRTC – 1	6.5	500	0
2	Passenger Overall - Onboard	VRTC – 2	6.5	500	0
3	Driver Pelvis Area - Onboard	VRTC – 3	8	500	0
4	Rear Passenger Waste Up	Redlake – LE	6	500	0
5	Rear Passenger Overall	Redlake – LE	4.8	500	0
6	Rear Passenger Head [1]	Redlake – LE	6	500	0
7	Vehicle Front Medium Tight 180-270 deg.	Visario G1	12.5	500	0
8	Vehicle Front Launch to 180 deg.	Redlake – LE	12.5	500	0
9	Vehicle Front Medium Wide at 270 deg.	Visario G1	12.5	500	0
10	Vehicle Rear Medium Wide at 270 deg.	Redlake – LE	12.5	500	500
11	Rear wide overall entire event	Redlake – LE	10	500	500
12	Overhead wide	Redlake – LE	12.5	500	0
13	Rear wide Launch to 180 deg. overall	Redlake – LE	12.5	500	0
14	Rear wide overall entire event	Redlake – LE	6.5	500	0
15	Real-time Panning	Canon	zoom	24	

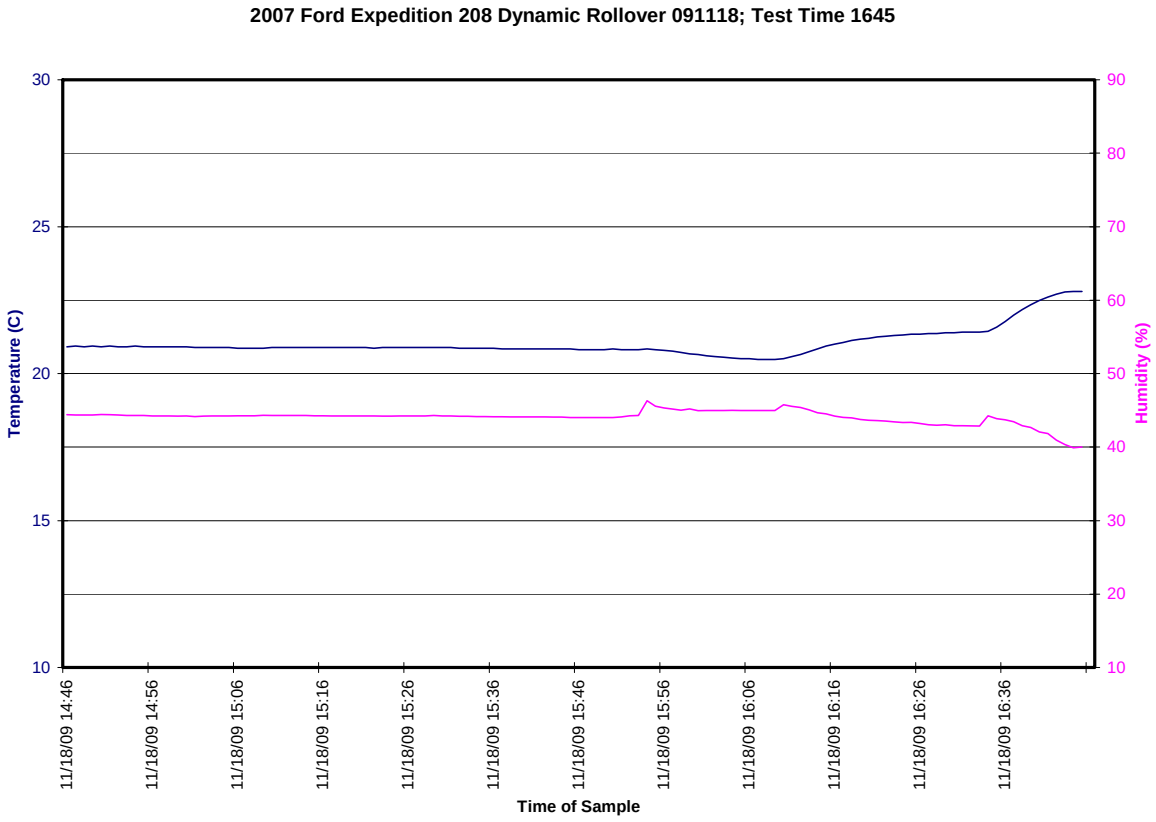
[1] The camera only recorded the initial 306 milliseconds of the event.

DATA SHEET NO. 10

DUMMY / VEHICLE TEMPERATURE STABILIZATION DATA

Test Vehicle: 2007 Ford Expedition

Test Program: Dynamic Rollover Test Date: 11/18/09



APPENDIX A

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Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View



Figure A-9 Pre-Test Rear View



Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View



Figure A-16 Post-Test Right Front View



Figure A-17 Pre-Test Front Underbody View

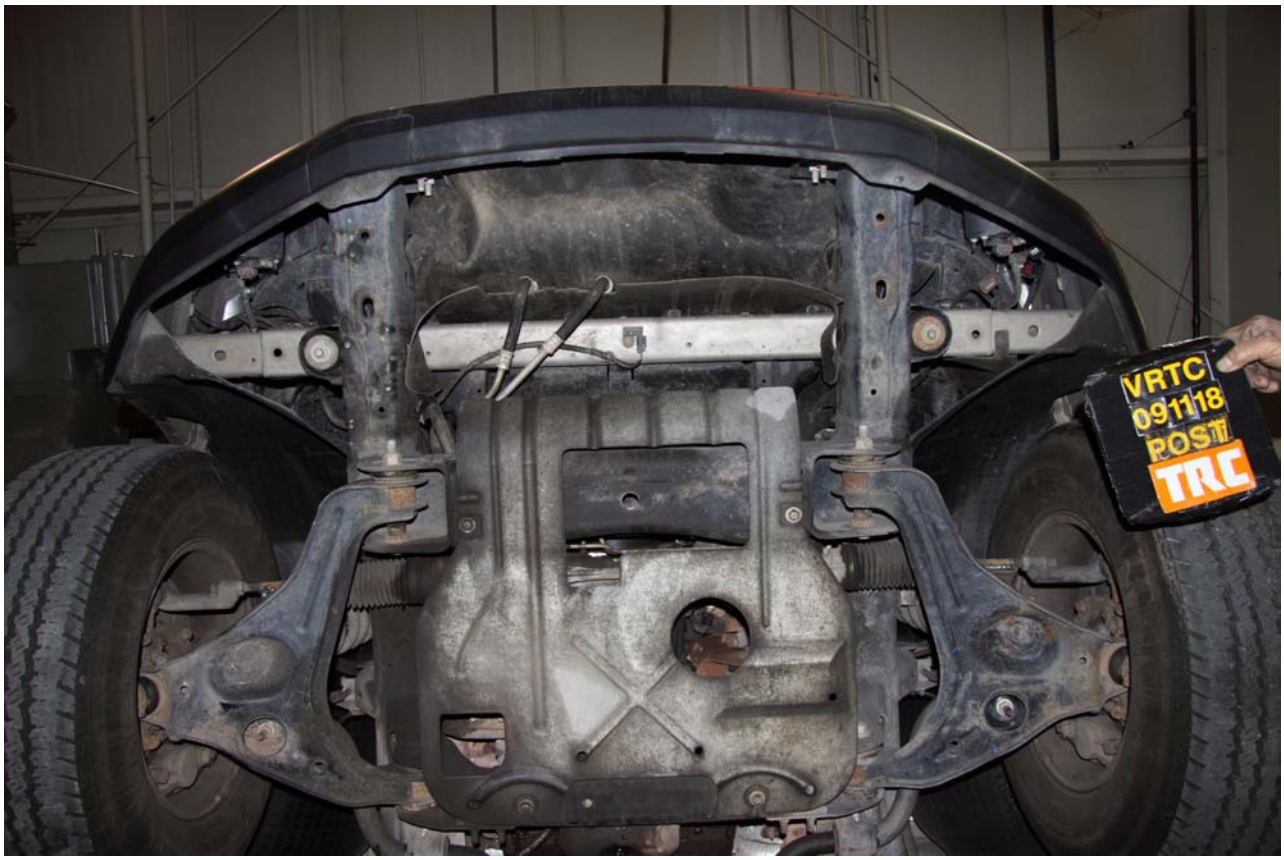


Figure A-18 Post-Test Front Underbody View

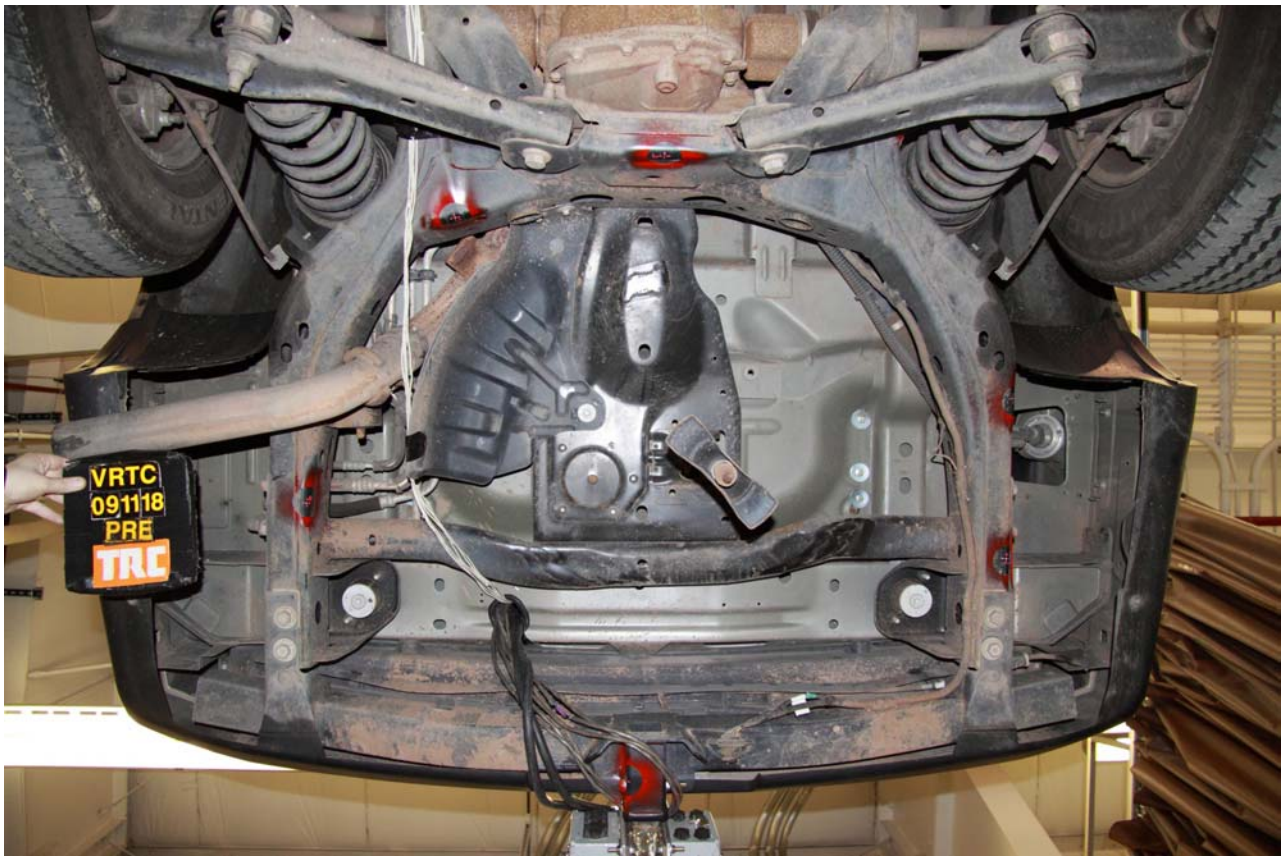


Figure A-19 Pre-Test Rear Underbody View



Figure A-20 Post-Test Rear Underbody View



Figure A-21 Pre-Test Windshield View



Figure A-22 Post-Test Windshield View



Figure A-23 Pre-Test Windshield View - Driver Dummy



Figure A-24 Post-Test Windshield View - Driver Dummy



Figure A-25 Pre-Test Driver Dummy - View 1



Figure A-26 Post-Test Driver Dummy - View 1



Figure A-27 Pre-Test Driver Dummy - View 2



Figure A-28 Post-Test Driver Dummy - View 2



Figure A-29 Pre-Test Driver Dummy - View 3



Figure A-30 Post-Test Driver Dummy - View 3



Figure A-31 Pre-Test Driver Dummy - View 4



Figure A-32 Post-Test Driver Dummy - View 4



Figure A-33 Pre-Test Windshield View – Right Front Passenger



Figure A-34 Post-Test Windshield View – Right Front Passenger



Figure A-35 Pre-Test Right Front Passenger Dummy - View 1



Figure A-36 Post-Test Right Front Passenger Dummy - View 1



Figure A-37 Pre-Test Right Front Passenger Dummy - View 2



Figure A-38 Post-Test Right Front Passenger Dummy - View 2



Figure A-39 Pre-Test Right Front Passenger Dummy - View 3



Figure A-40 Post-Test Right Front Passenger Dummy - View 3

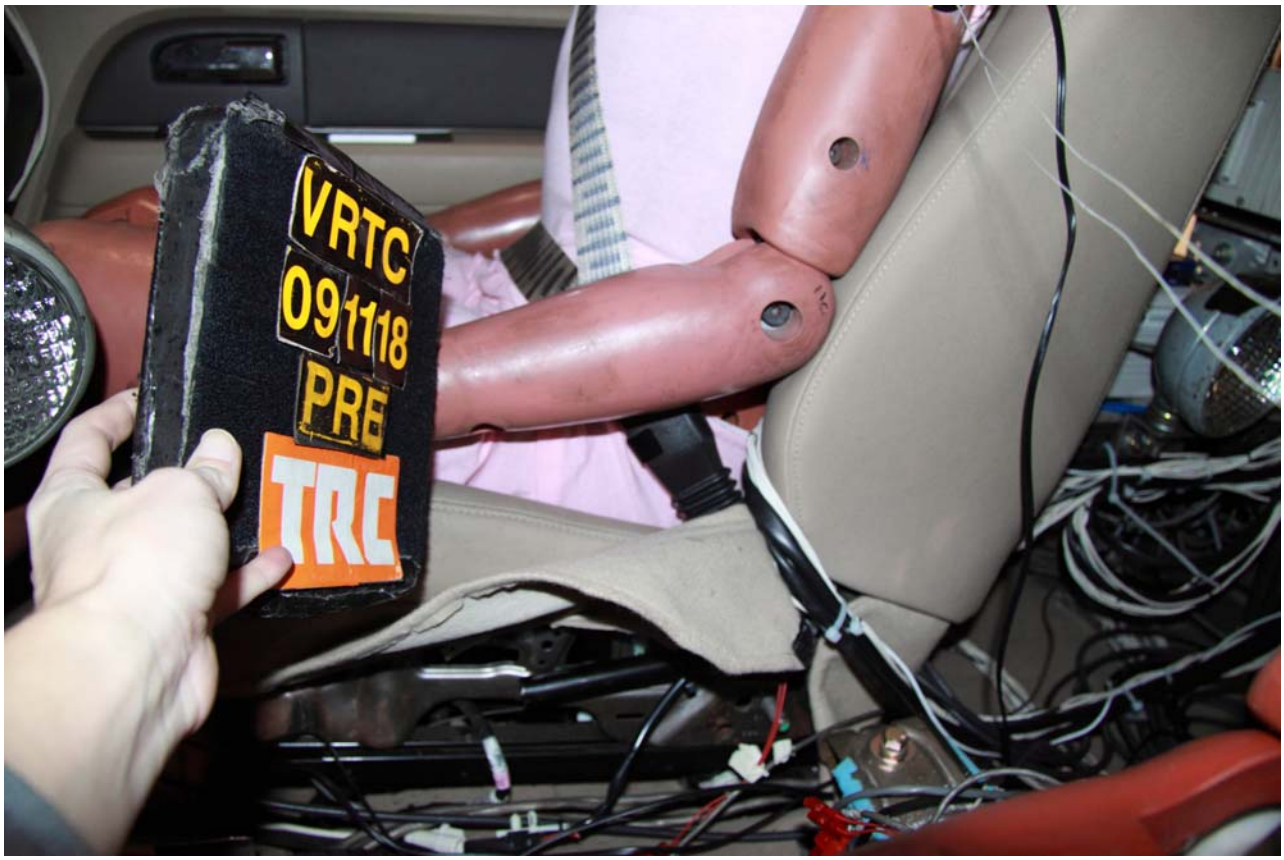


Figure A-41 Pre-Test Right Front Passenger Dummy - View 4



Figure A-42 Post-Test Right Front Passenger Dummy - View 4



Figure A-43 Pre-Test Left Rear Passenger Dummy - View 1



Figure A-44 Post-Test Left Rear Passenger Dummy - View 1



Figure A-45 Pre-Test Left Rear Passenger Dummy - View 2



Figure A-46 Post-Test Left Rear Passenger Dummy - View 2



Figure A-47 Pre-Test Left Rear Passenger Dummy - View 3



Figure A-48 Post-Test Left Rear Passenger Dummy - View 3



Figure A-49 Vehicle Certification Label View



Figure A-50 Vehicle Tire Pressure Label View



Figure A-51 Pre-Test Right Front Tire on Cart View



Figure A-52 Pre-Test Right Rear Tire on Cart View



Figure A-53 Pre-Test Left Front Tire on Cart View



Figure A-54 Pre-Test Left Rear Tire on Cart View



Figure A-55 Pre-Test Ballast View



Figure A-56 Pre-Test Rollover Cart View

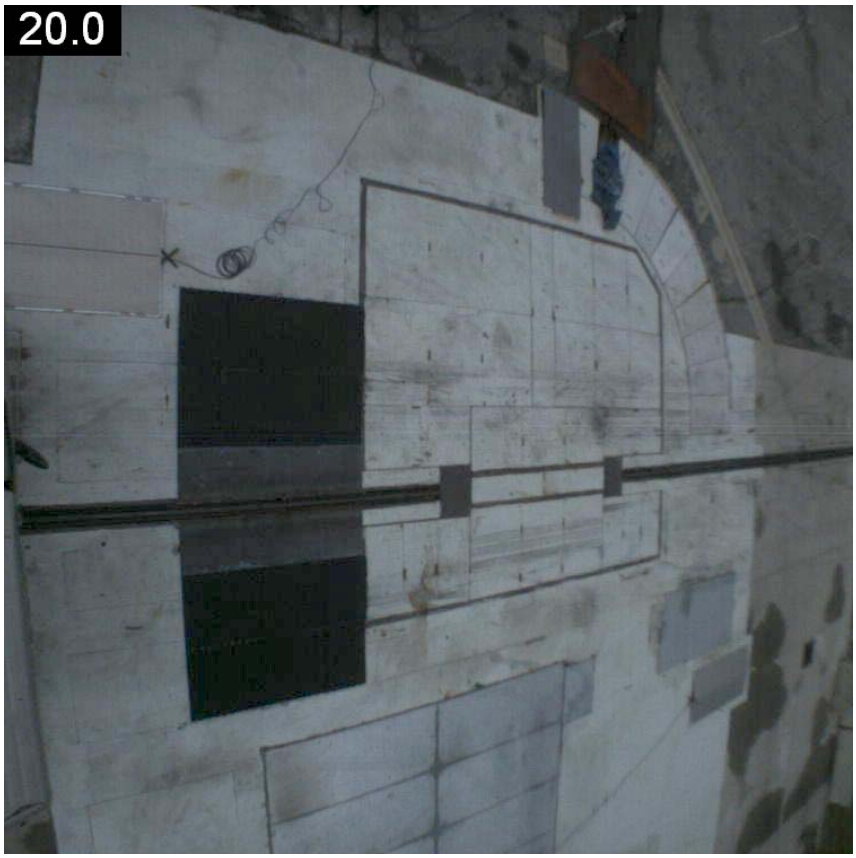


Figure A-57 Pre-Test Rollover Mats Placement View



Figure A-58 Post-Test Rollover Mats Displacement View

APPENDIX B

DATA PLOTS

FMVSS 208 Rollover 2007 Ford Expedition

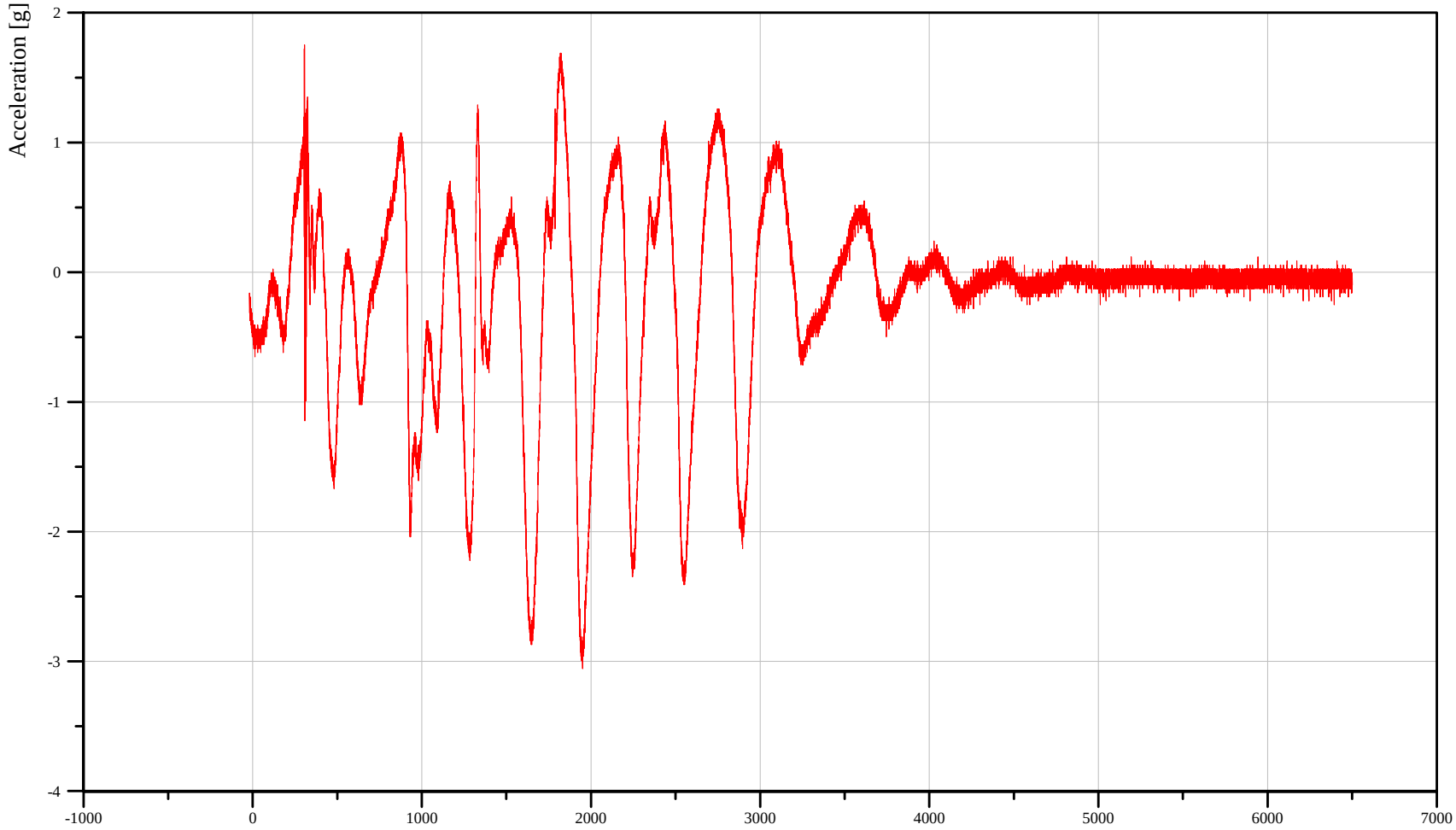
Driver Head X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-3.06 g at 1,949.20 ms

Max. Value
1.75 g at 305.44 ms

FMVSS 208 Rollover 2007 Ford Expedition

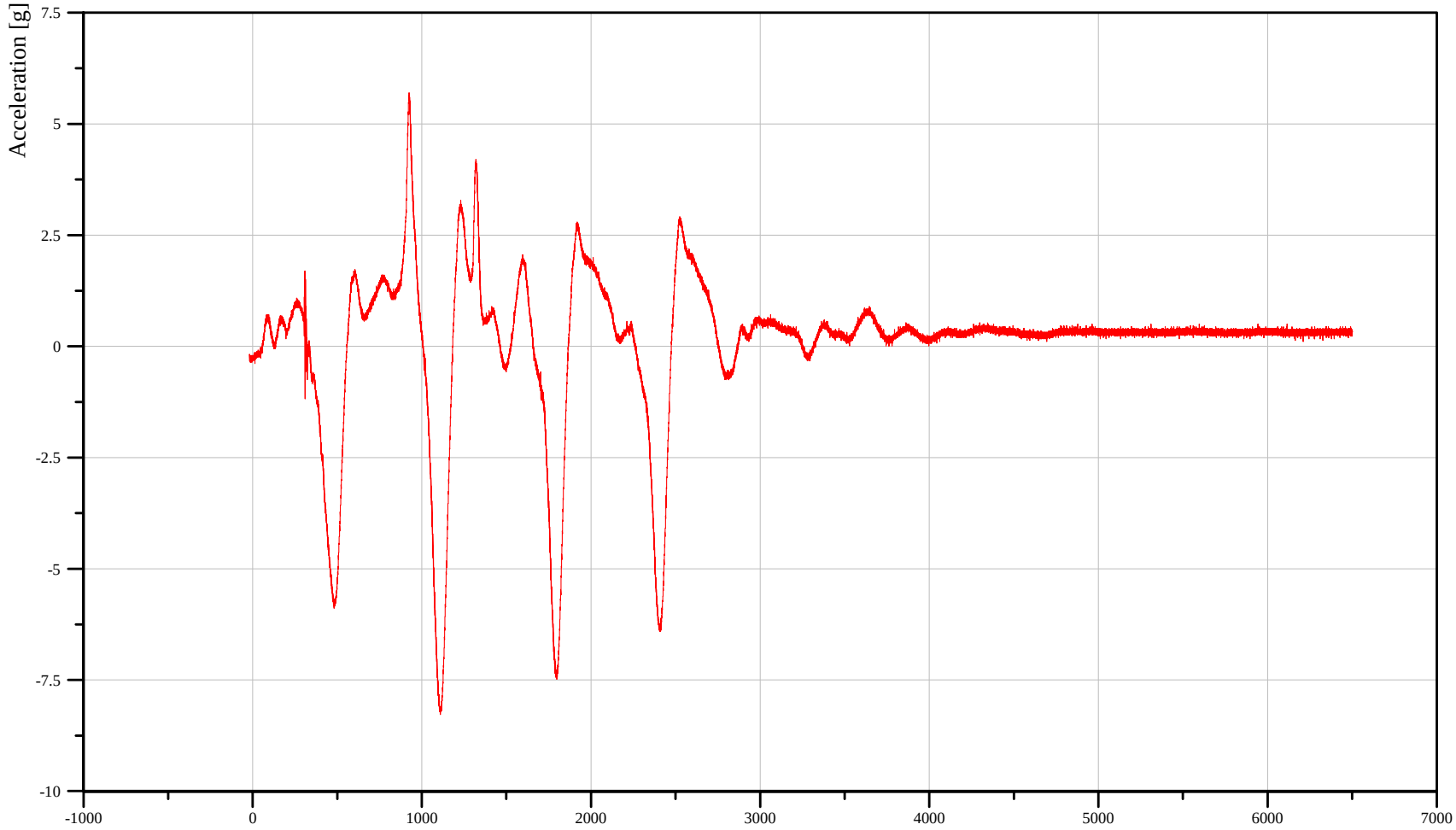
Driver Head Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-8.28 g at 1,108.16 ms

Max. Value
5.70 g at 923.36 ms

FMVSS 208 Rollover 2007 Ford Expedition

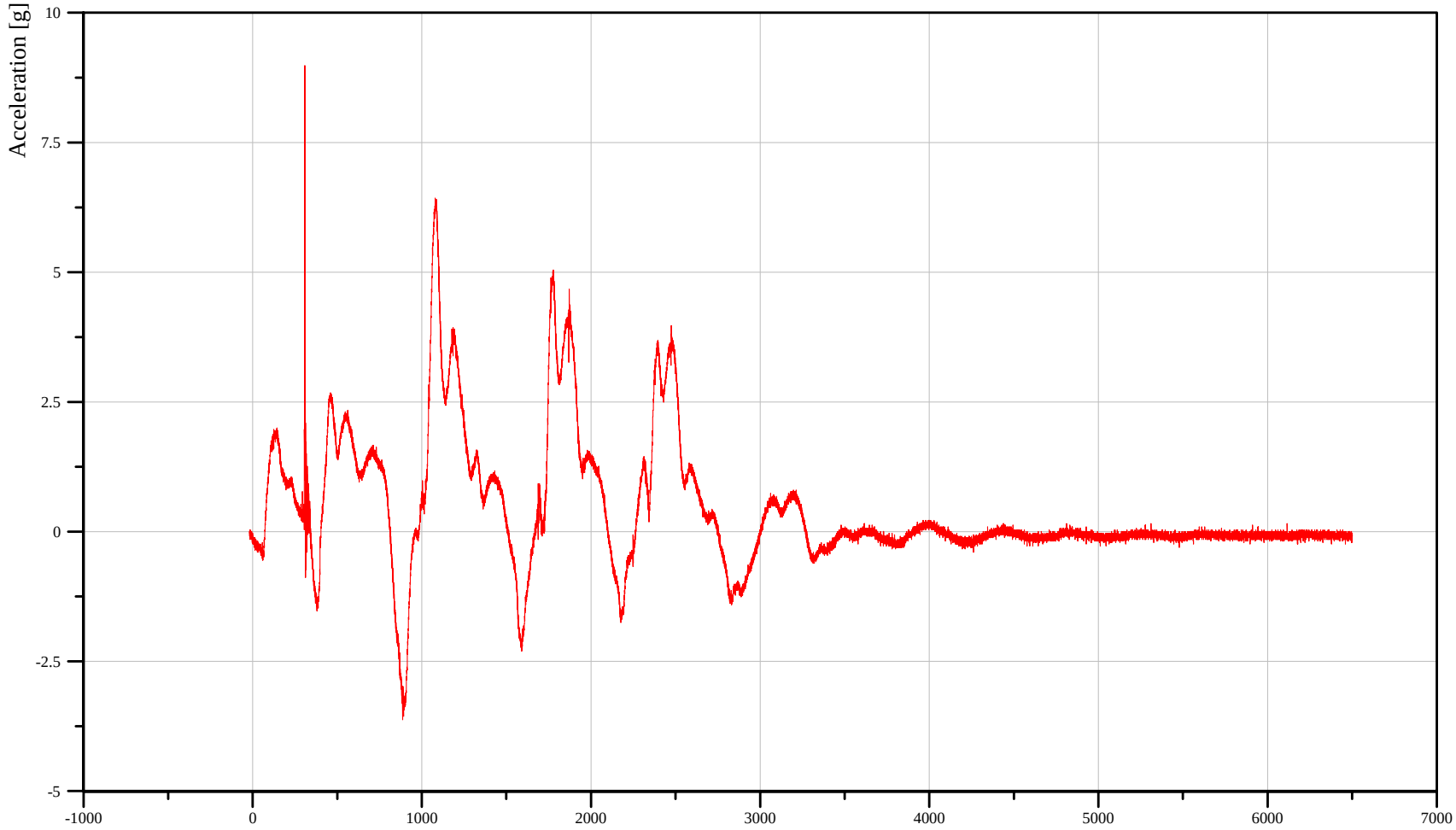
Driver Head Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-3.62 g at 886.64 ms

Max. Value
8.98 g at 307.60 ms

FMVSS 208 Rollover 2007 Ford Expedition

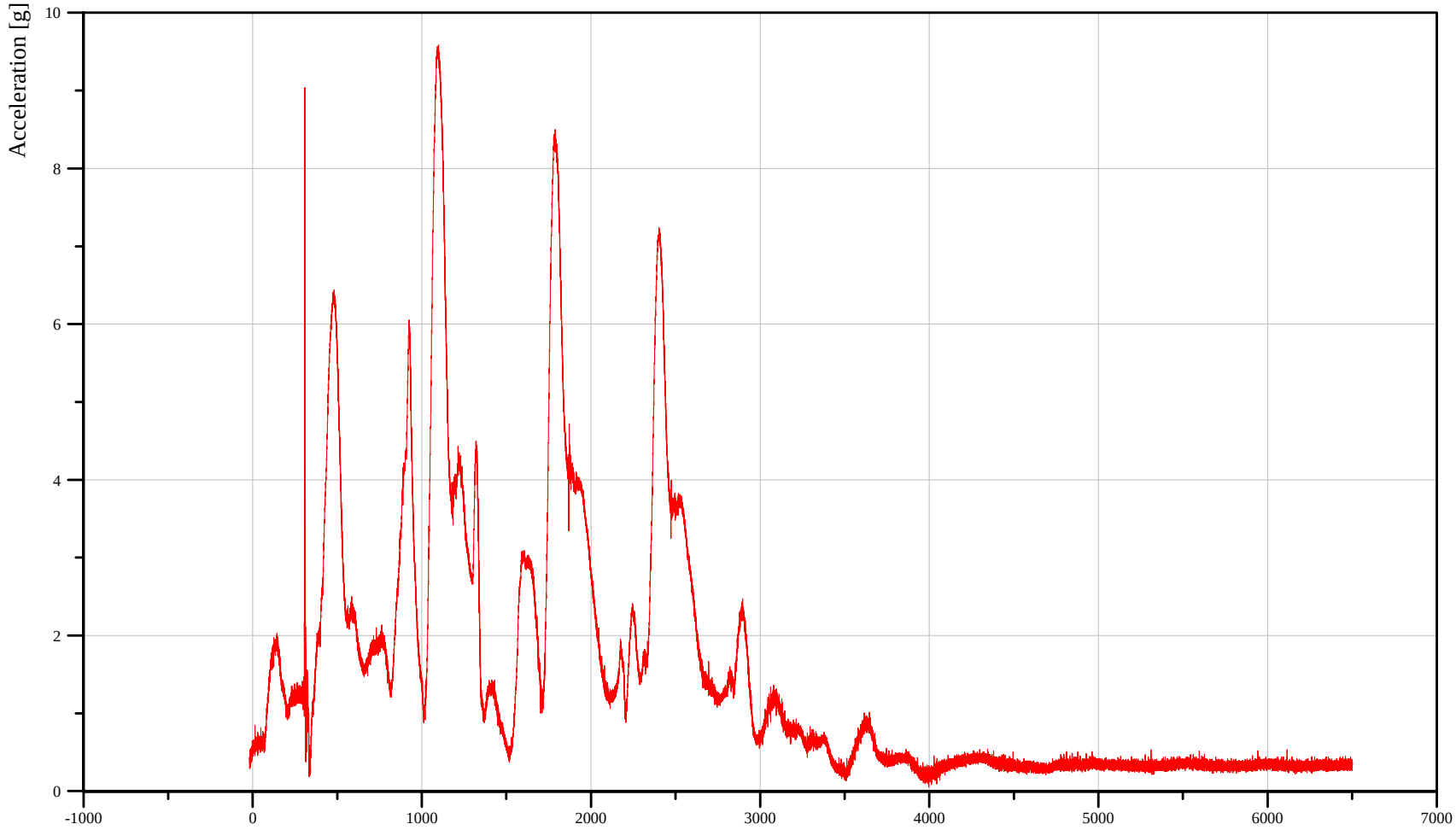
Driver Head Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.05 g at 3,997.68 ms

Max. Value
9.59 g at 1,097.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

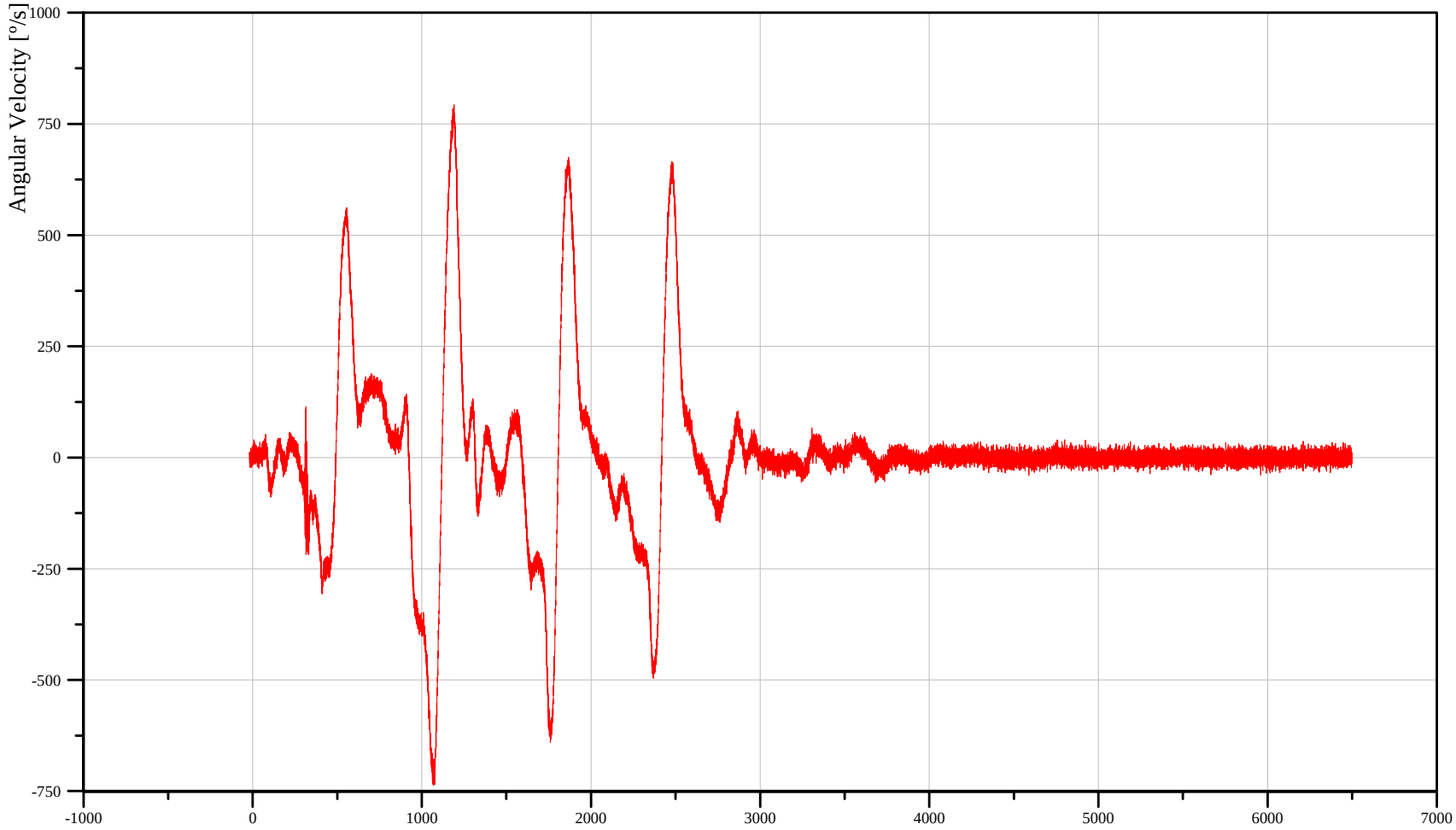
Driver Head (DTS ARS) Rate Gyro X

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3AVXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-737.19 °/s at 1,067.44 ms

Max. Value
792.82 °/s at 1,188.96 ms

FMVSS 208 Rollover 2007 Ford Expedition

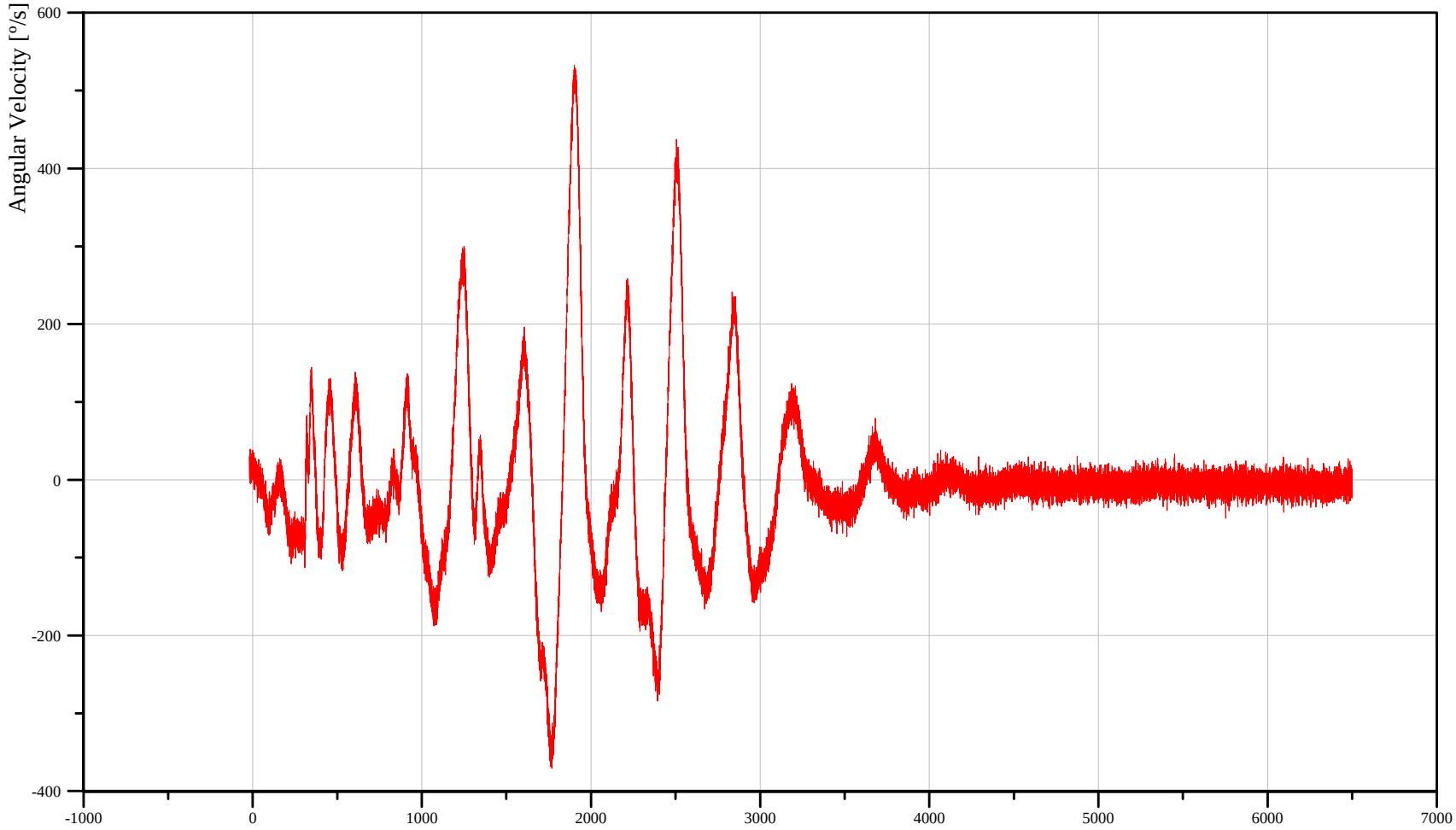
Driver Head (DTS ARS) Rate Gyro Y

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3AVYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-371.06 °/s at 1,767.44 ms

Max. Value
532.61 °/s at 1,901.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

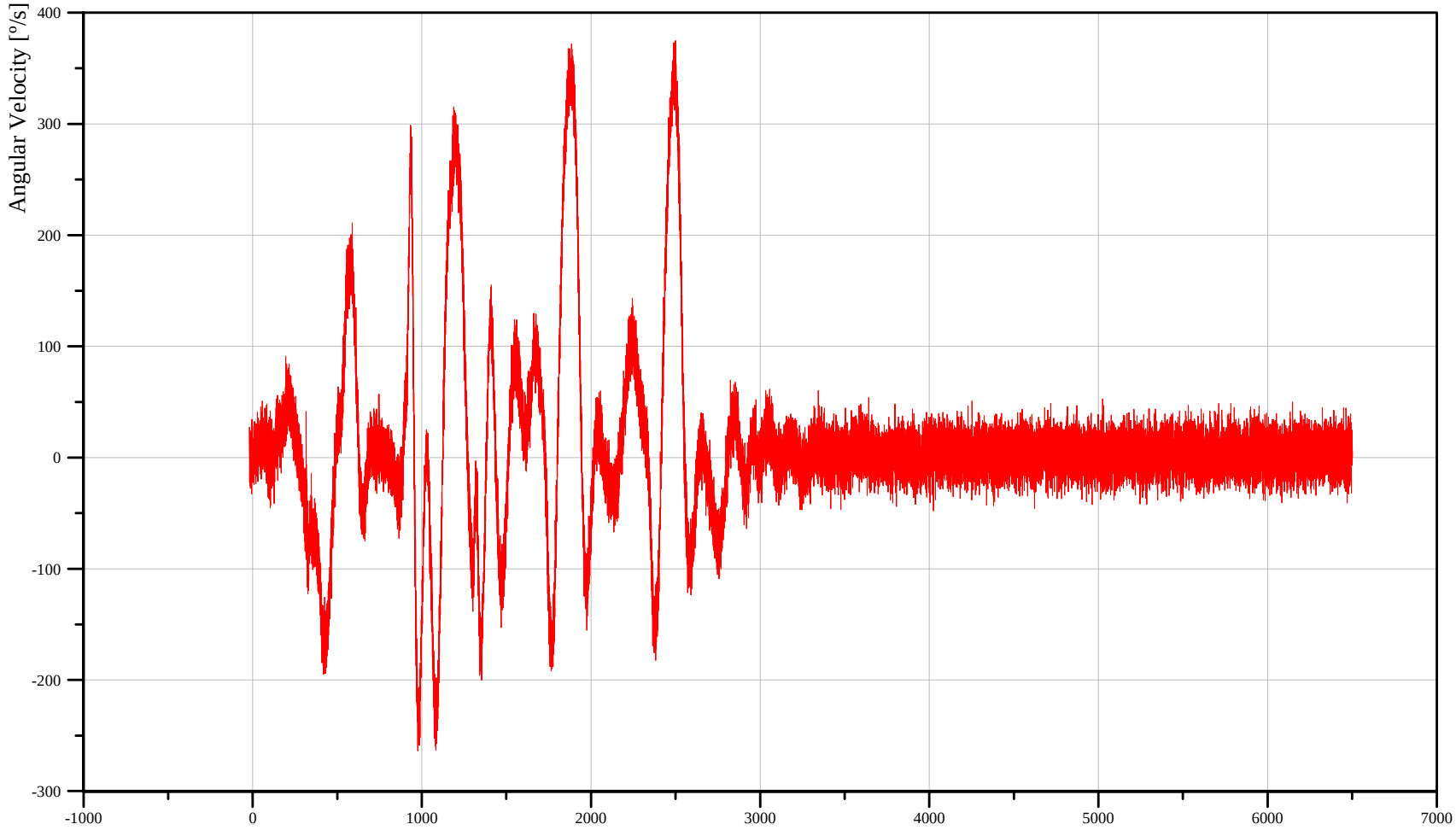
Driver Head (DTS ARS) Rate Gyro Z

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11HEADCG00H3AVZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-263.62 °/s at 975.60 ms

Max. Value
374.88 °/s at 2,499.60 ms

FMVSS 208 Rollover 2007 Ford Expedition

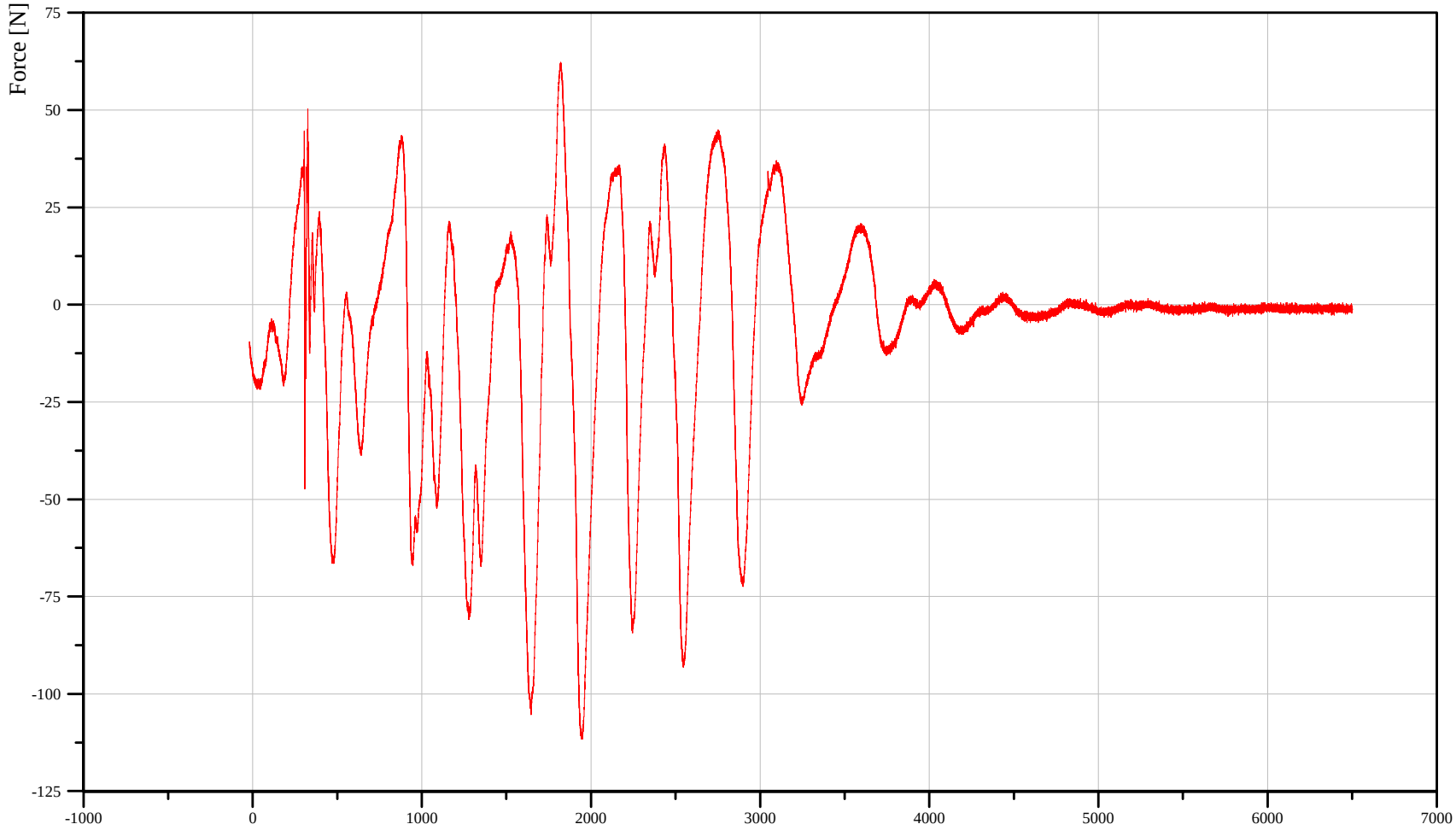
Driver Upper Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-111.61 N at 1,941.44 ms

Max. Value
62.32 N at 1,819.84 ms

FMVSS 208 Rollover 2007 Ford Expedition

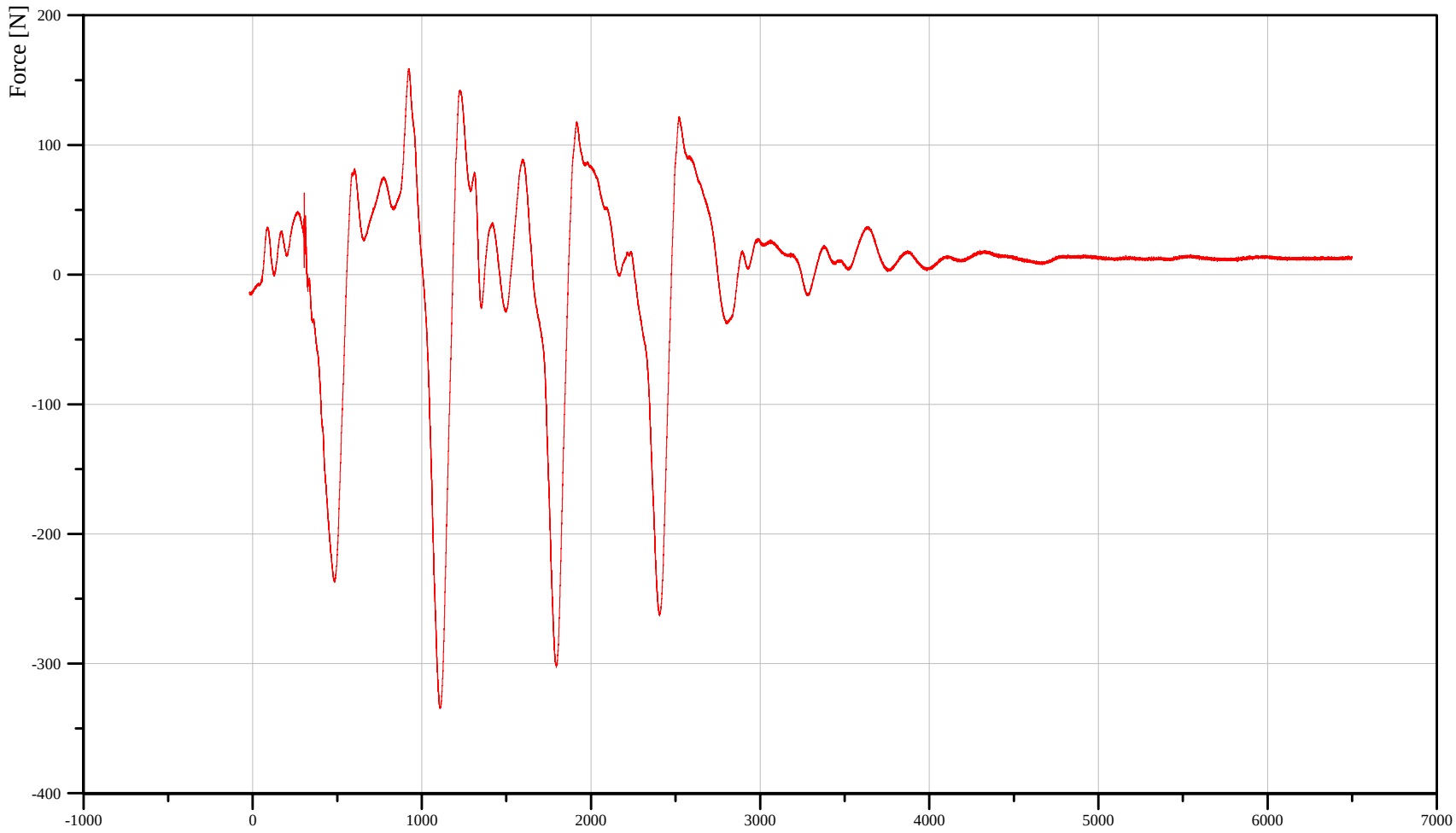
Driver Upper Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-334.56 N at 1,107.68 ms

Max. Value
159.11 N at 922.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

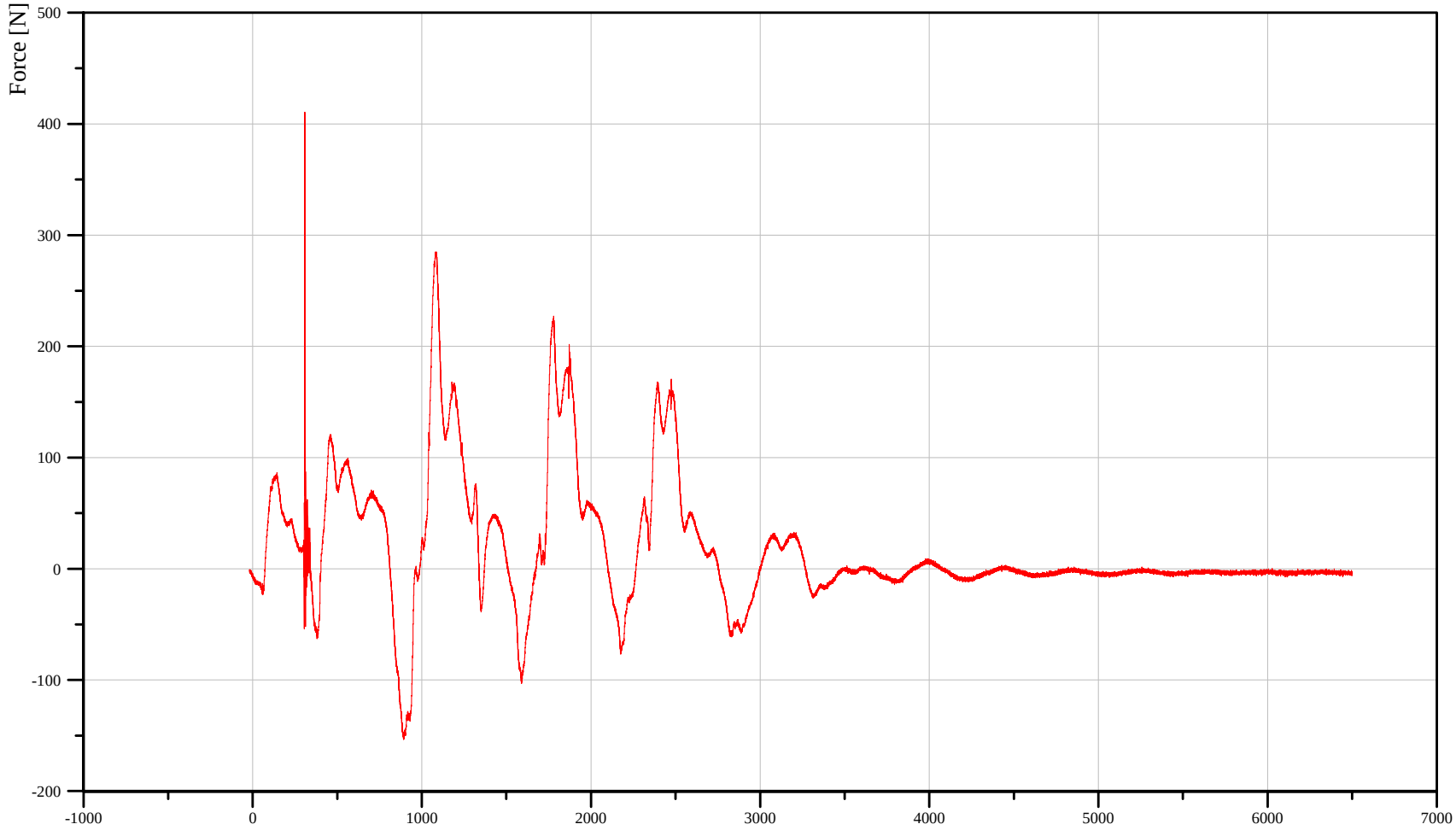
Driver Upper Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-153.49 N at 890.96 ms

Max. Value
410.75 N at 308.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

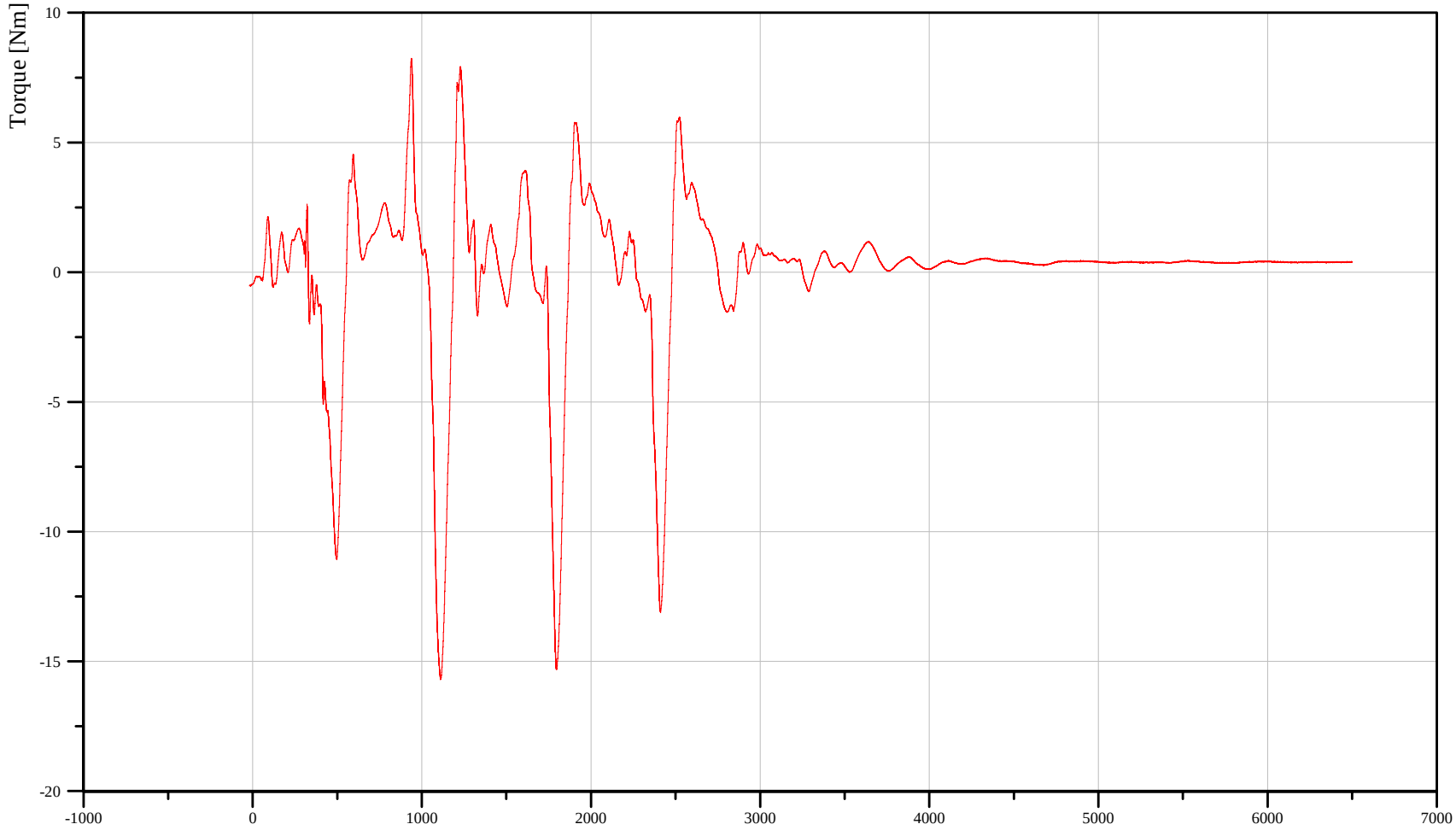
Driver Upper Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-15.70 Nm at 1,109.60 ms

Max. Value
8.25 Nm at 937.84 ms

FMVSS 208 Rollover 2007 Ford Expedition

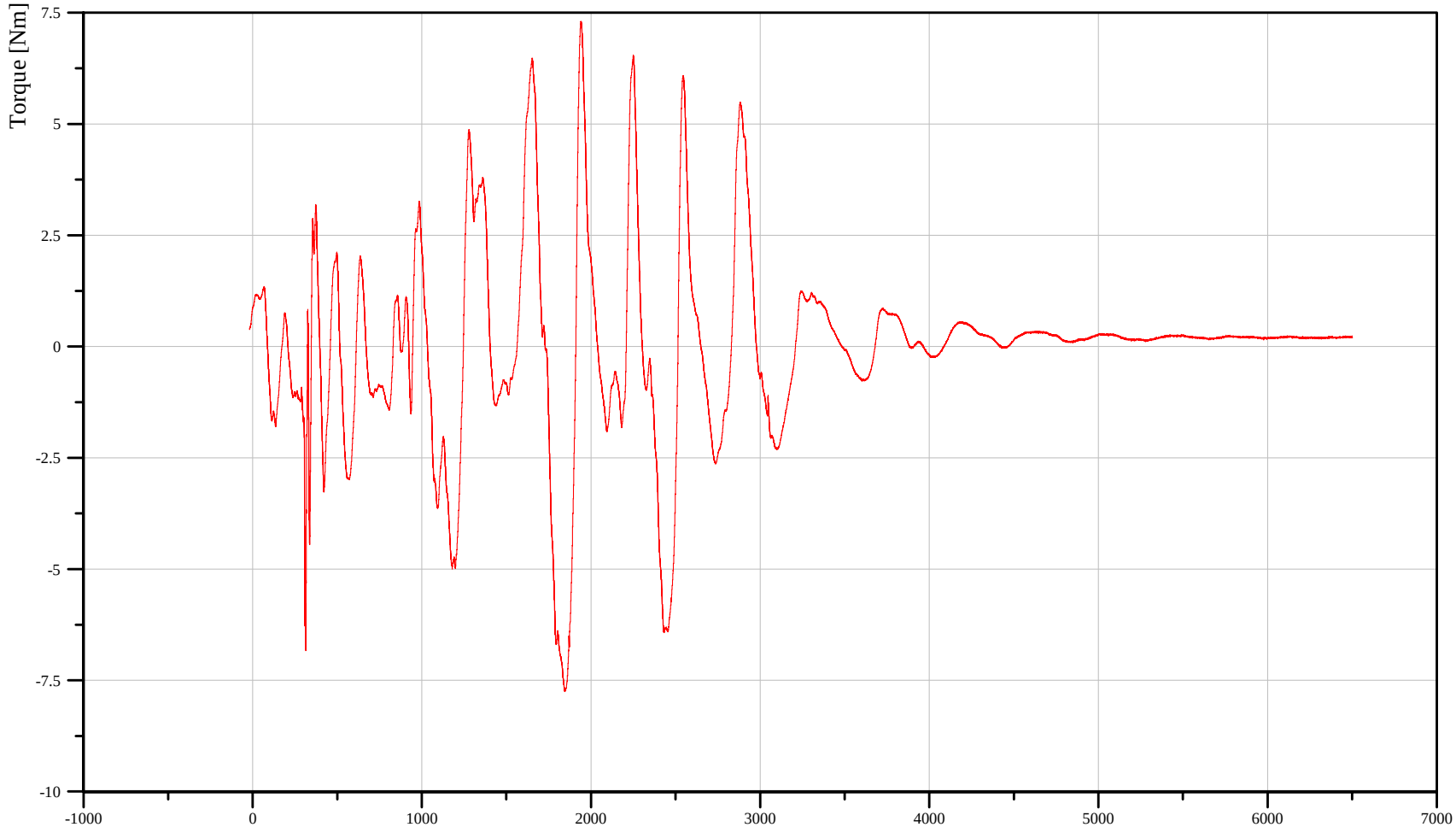
Driver Upper Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-7.75 Nm at 1,844.08 ms

Max. Value
7.31 Nm at 1,939.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

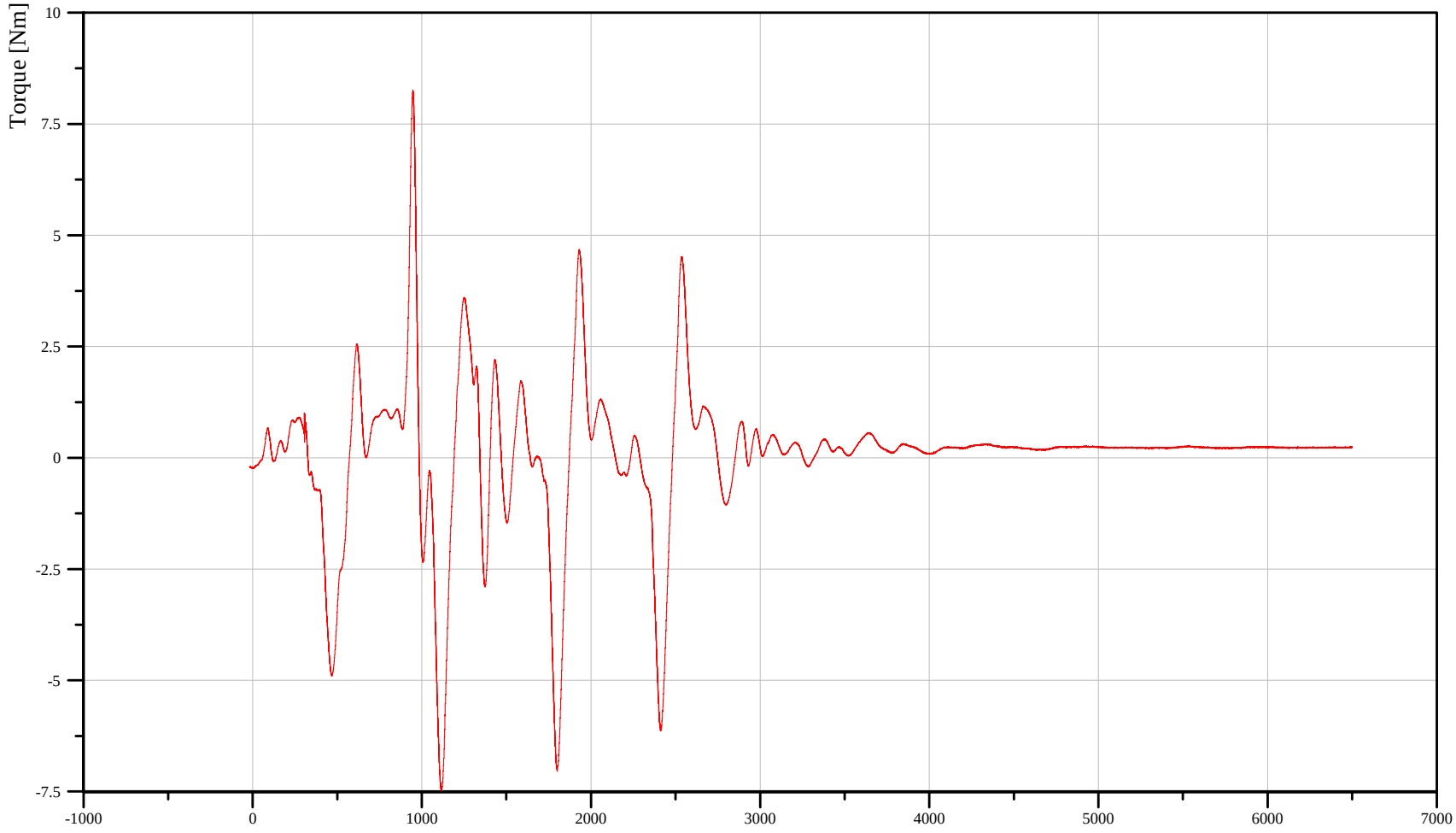
Driver Upper Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-7.48 Nm at 1,115.52 ms

Max. Value
8.26 Nm at 945.92 ms

FMVSS 208 Rollover 2007 Ford Expedition

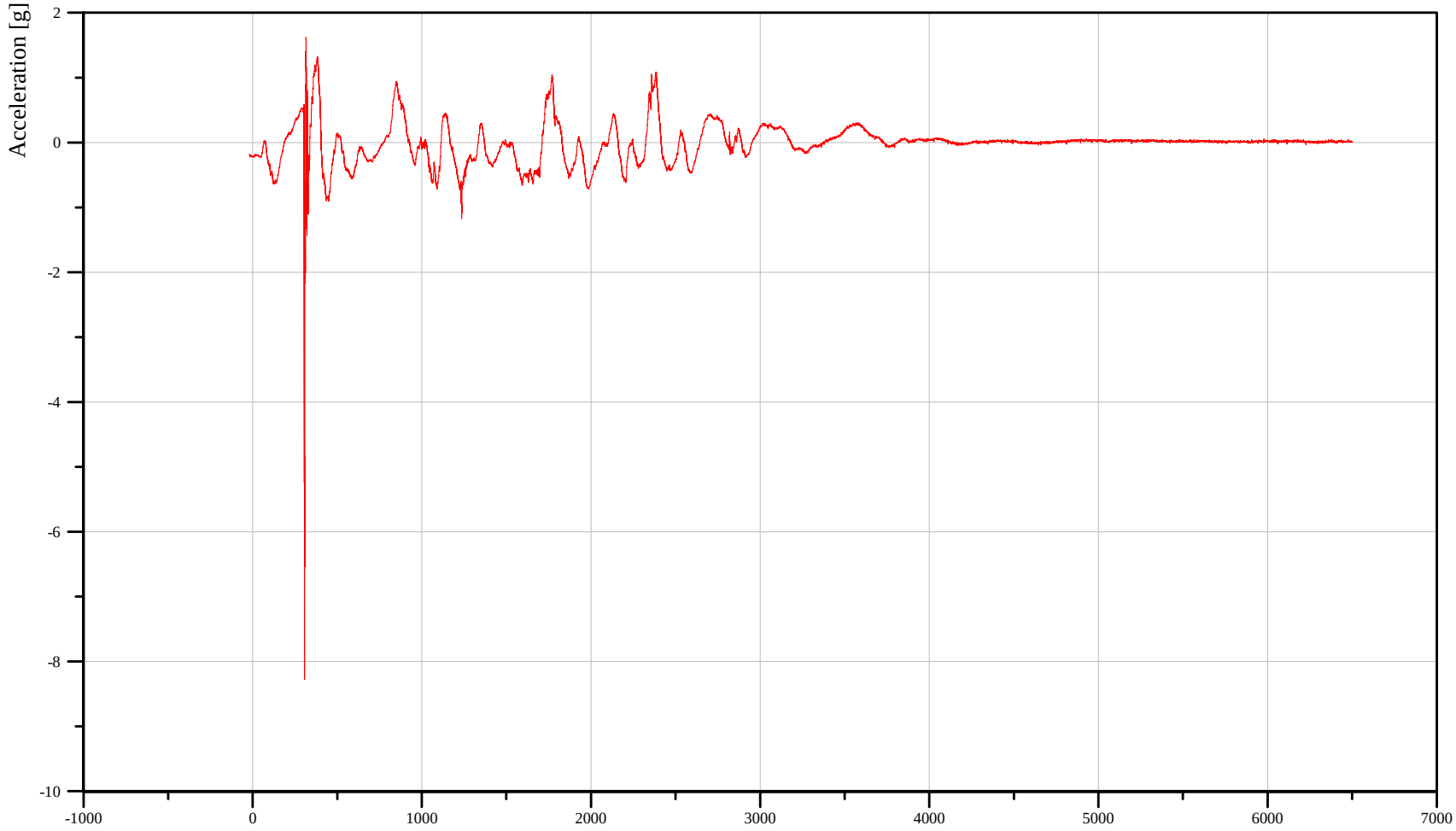
Driver Chest X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-8.27 g at 306.16 ms

Max. Value
1.62 g at 314.96 ms

FMVSS 208 Rollover 2007 Ford Expedition

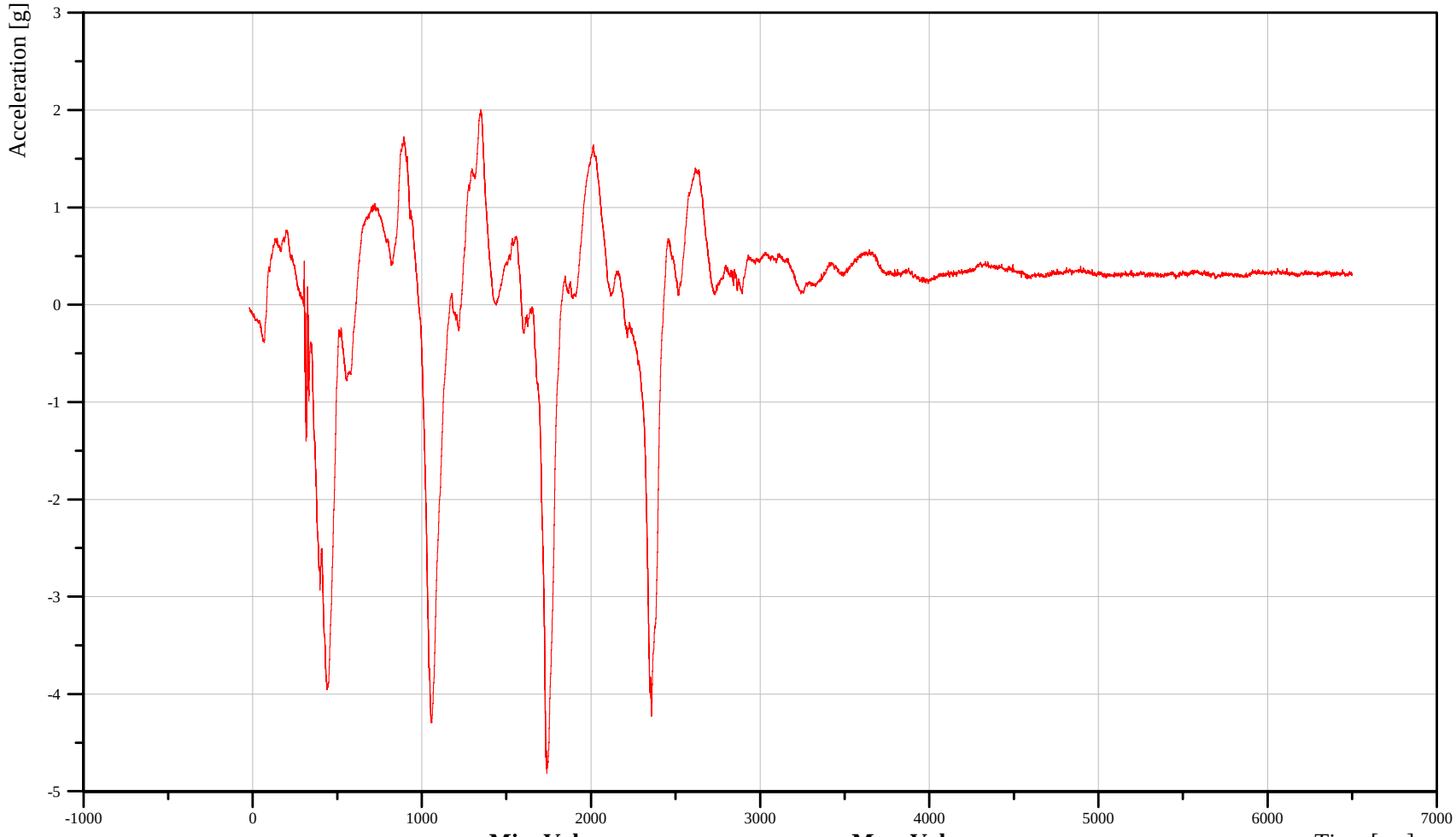
Driver Chest Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-4.82 g at 1,739.44 ms

Max. Value
2.01 g at 1,346.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

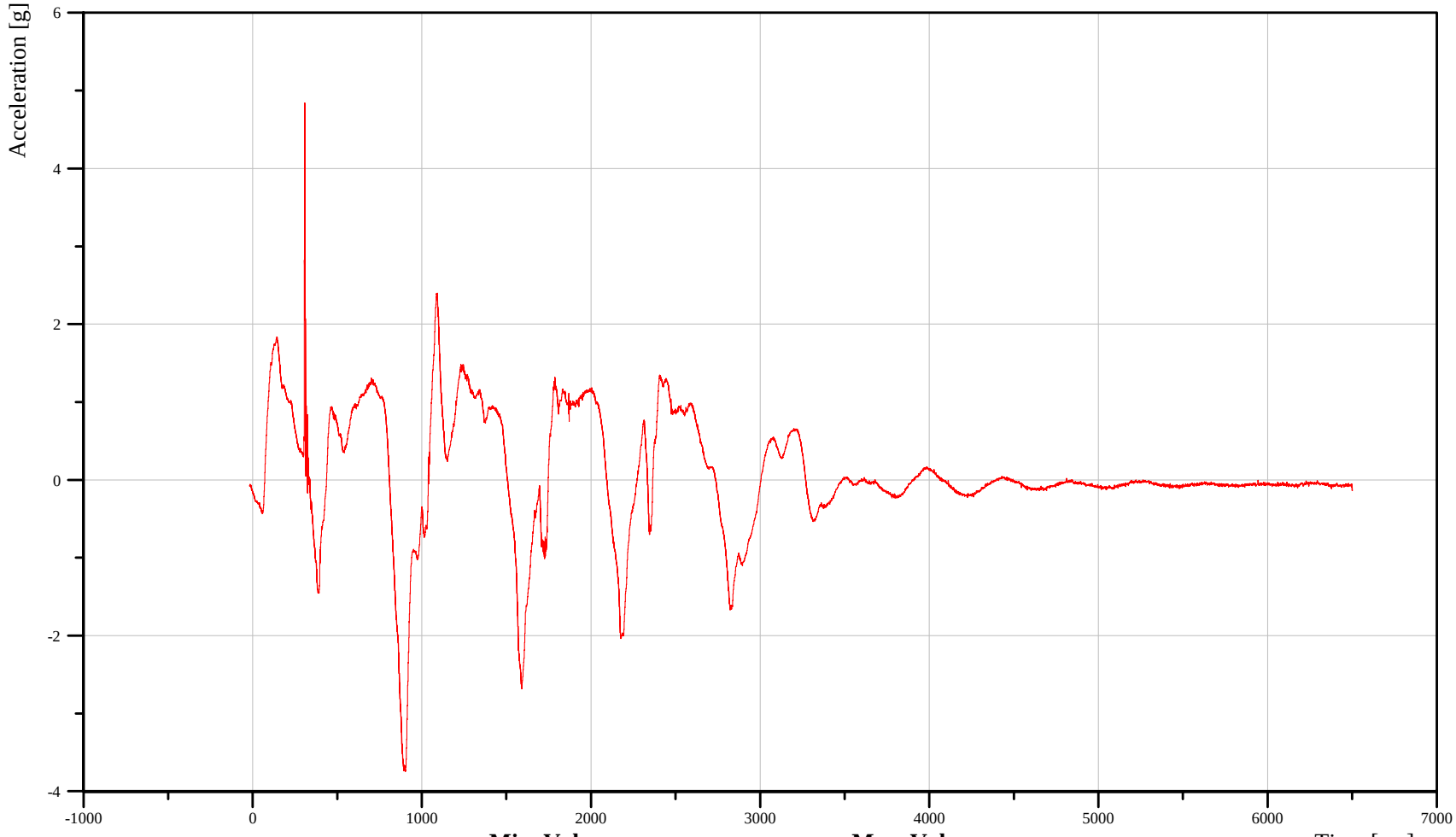
Driver Chest Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-3.75 g at 902.80 ms

Max. Value
4.84 g at 306.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

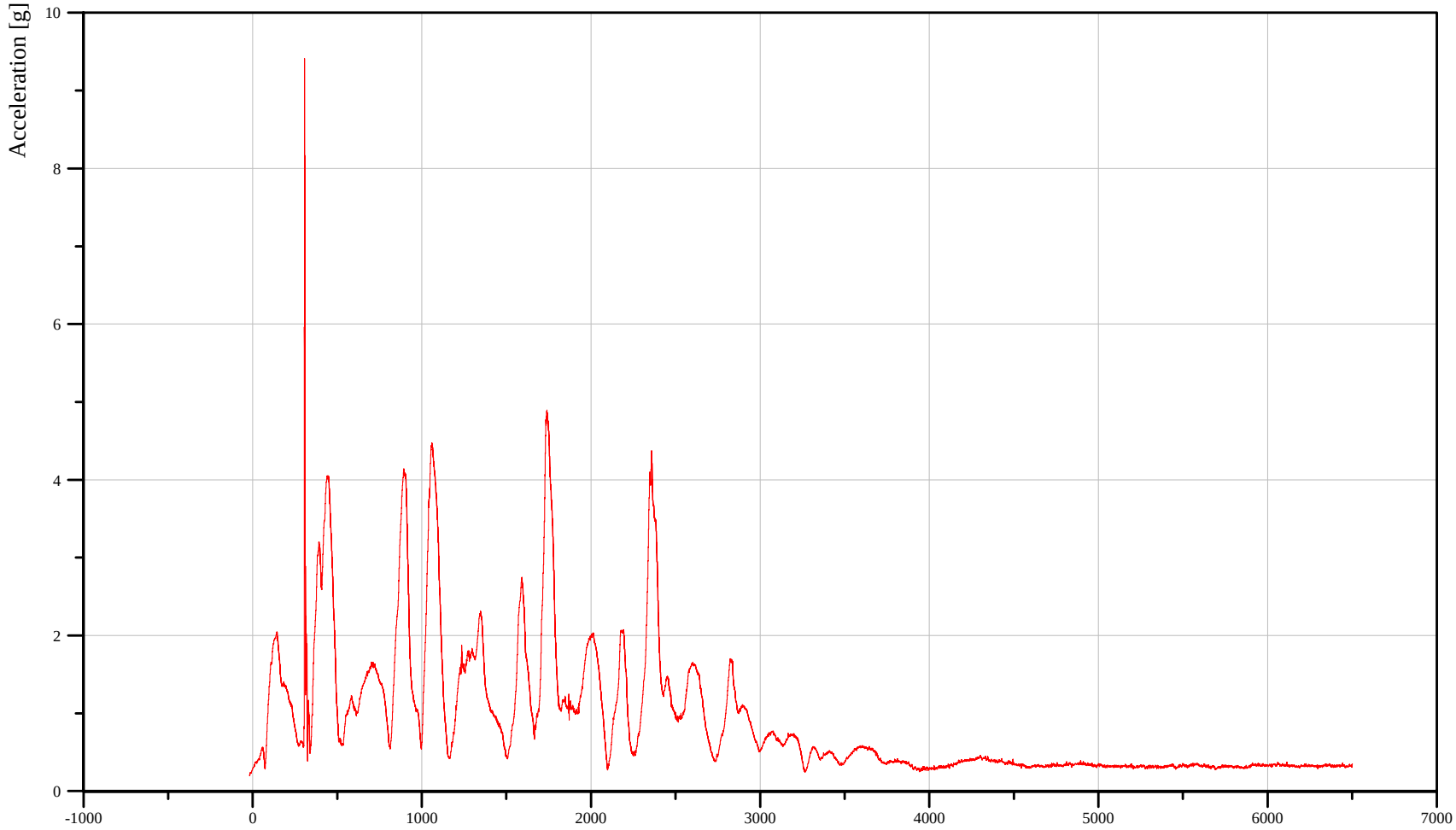
Driver Chest Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
0.20 g at -18.88 ms

Max. Value
9.41 g at 306.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

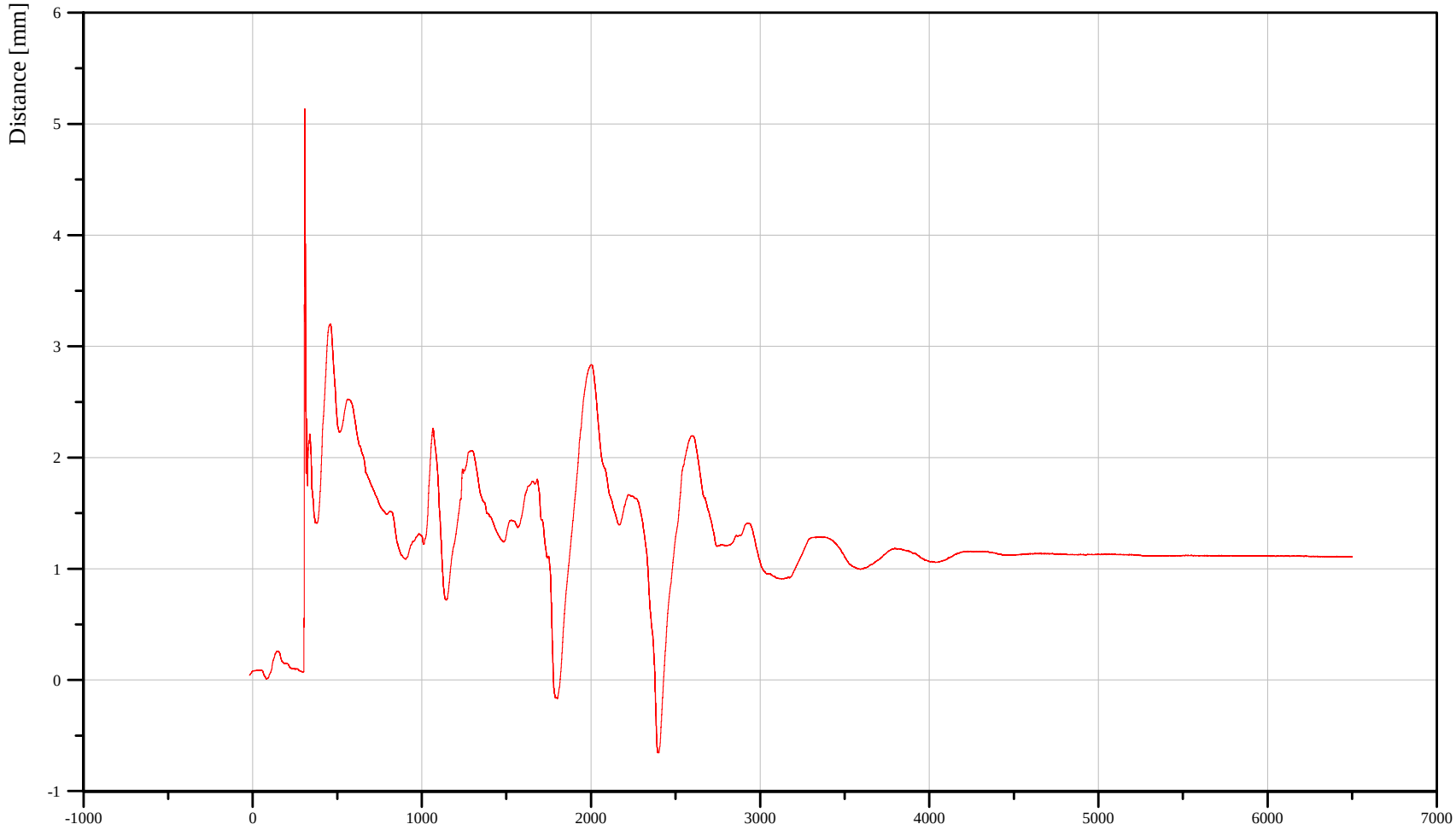
Driver Chest X-Axis Displacement

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-0.66 mm at 2,400.48 ms

Max. Value
5.14 mm at 308.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

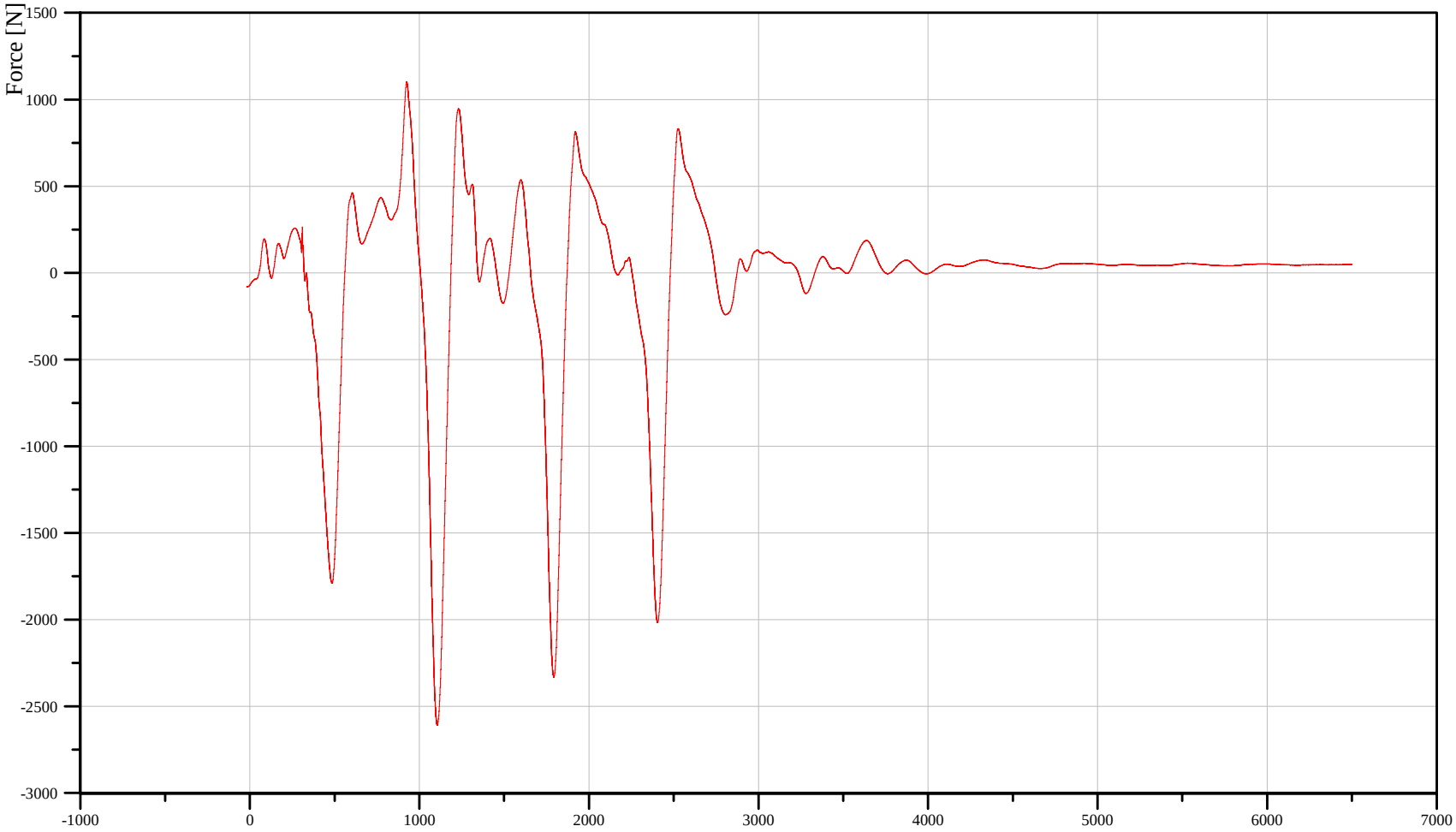
Driver Lower Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-2,611.05 N at 1,105.04 ms

Max. Value
1,102.73 N at 925.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

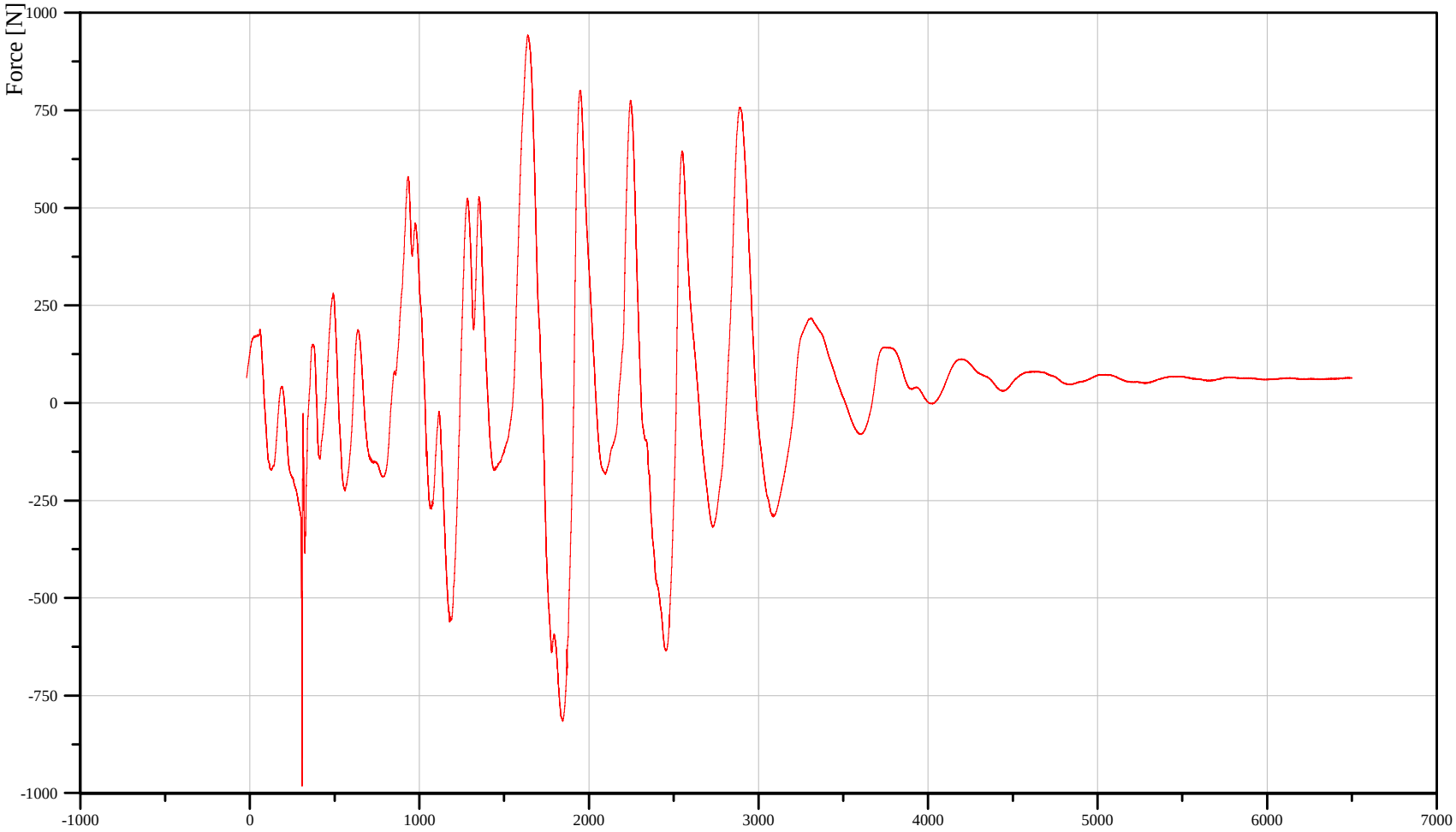
Driver Lower Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-982.27 N at 307.68 ms

Max. Value
943.24 N at 1,638.40 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

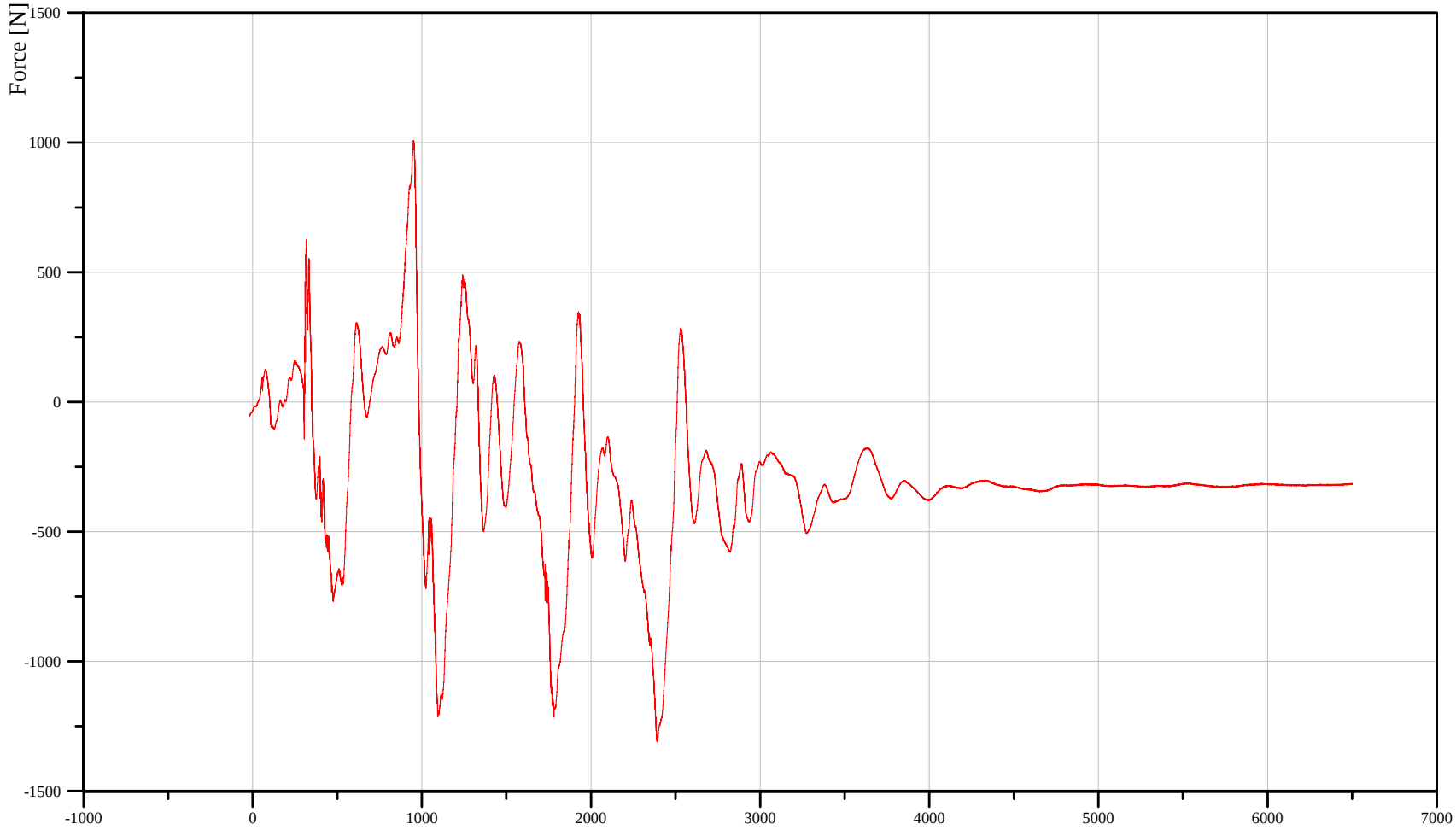
Driver Lower Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-1,310.85 N at 2,390.80 ms

Max. Value
1,008.01 N at 950.88 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

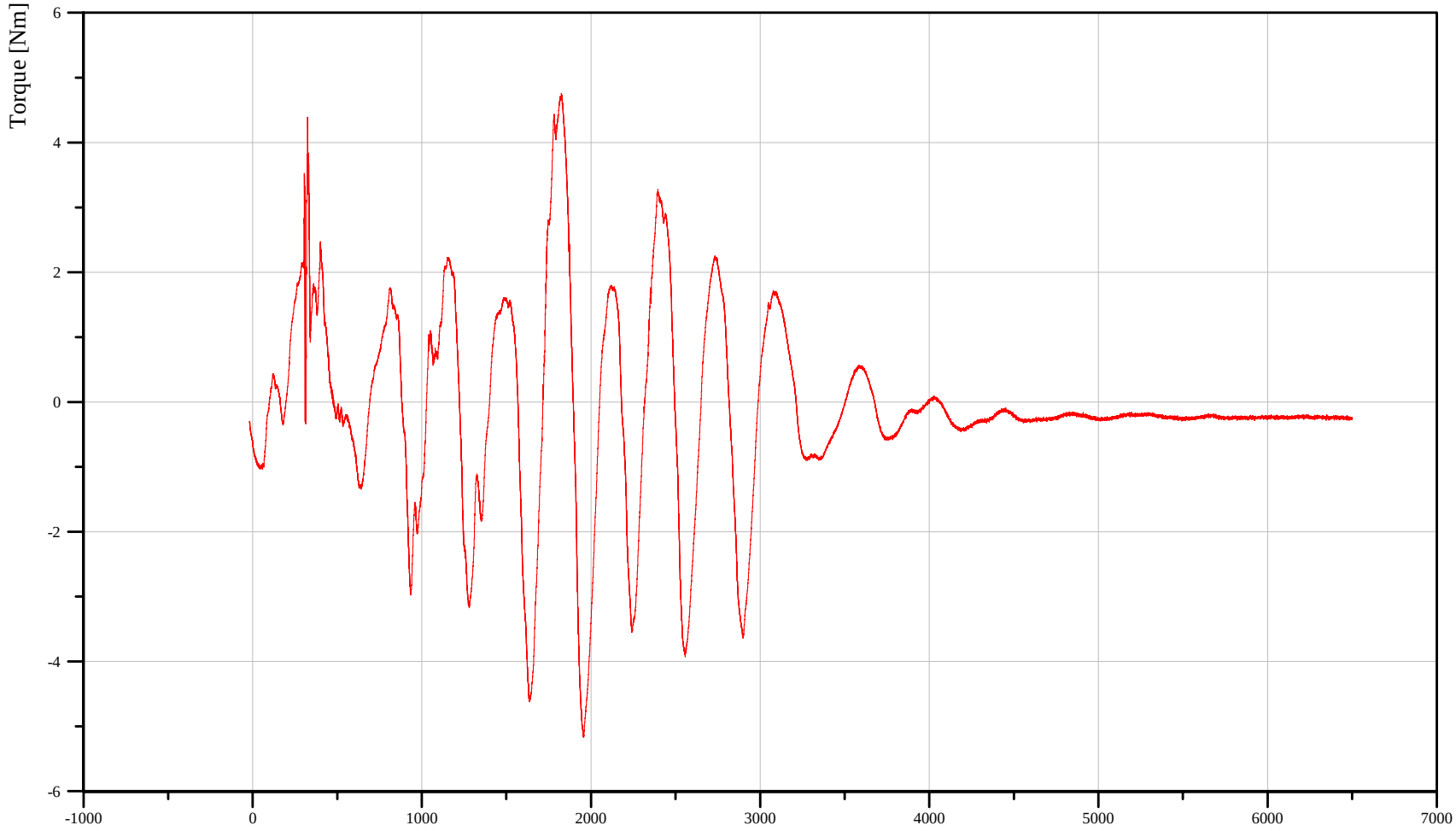
Driver Lower Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-5.17 Nm at 1,955.12 ms

Max. Value
4.76 Nm at 1,824.40 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

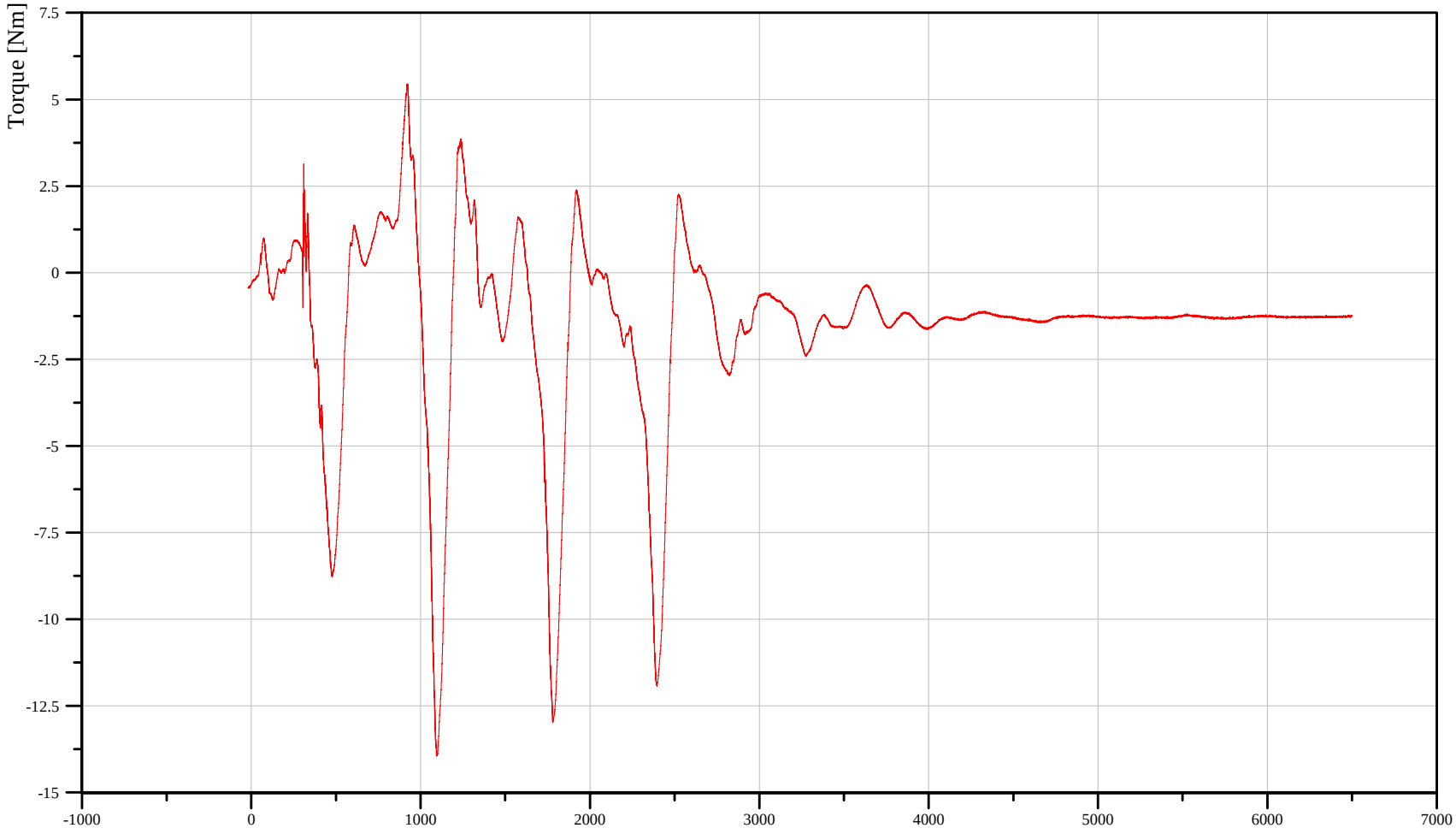
Driver Lower Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-13.94 Nm at 1,093.52 ms

Max. Value
5.45 Nm at 921.04 ms

FMVSS 208 Rollover 2007 Ford Expedition

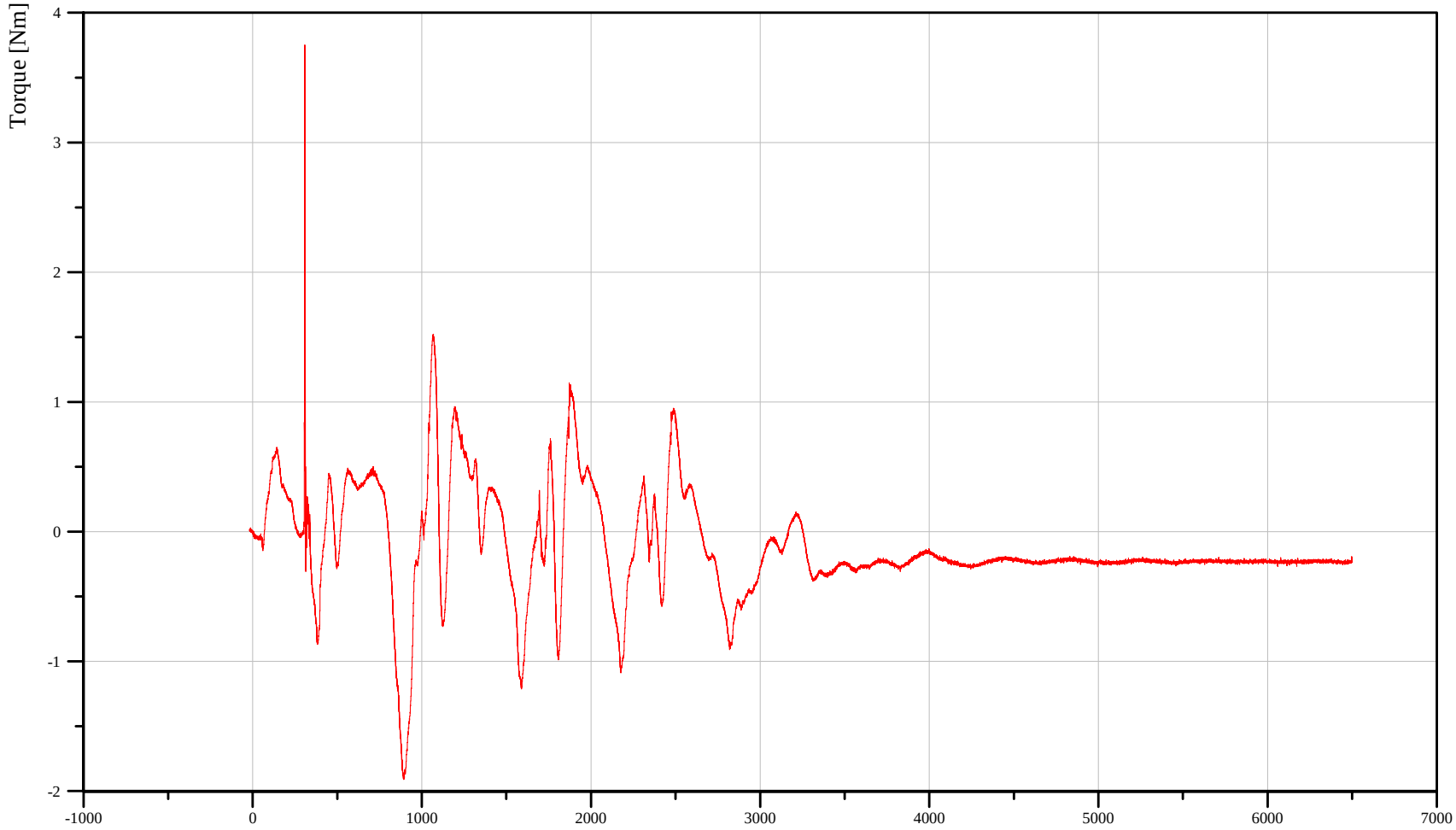
Driver Lower Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11NECKLO00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-1.91 Nm at 892.00 ms

Max. Value
3.75 Nm at 307.68 ms

FMVSS 208 Rollover 2007 Ford Expedition

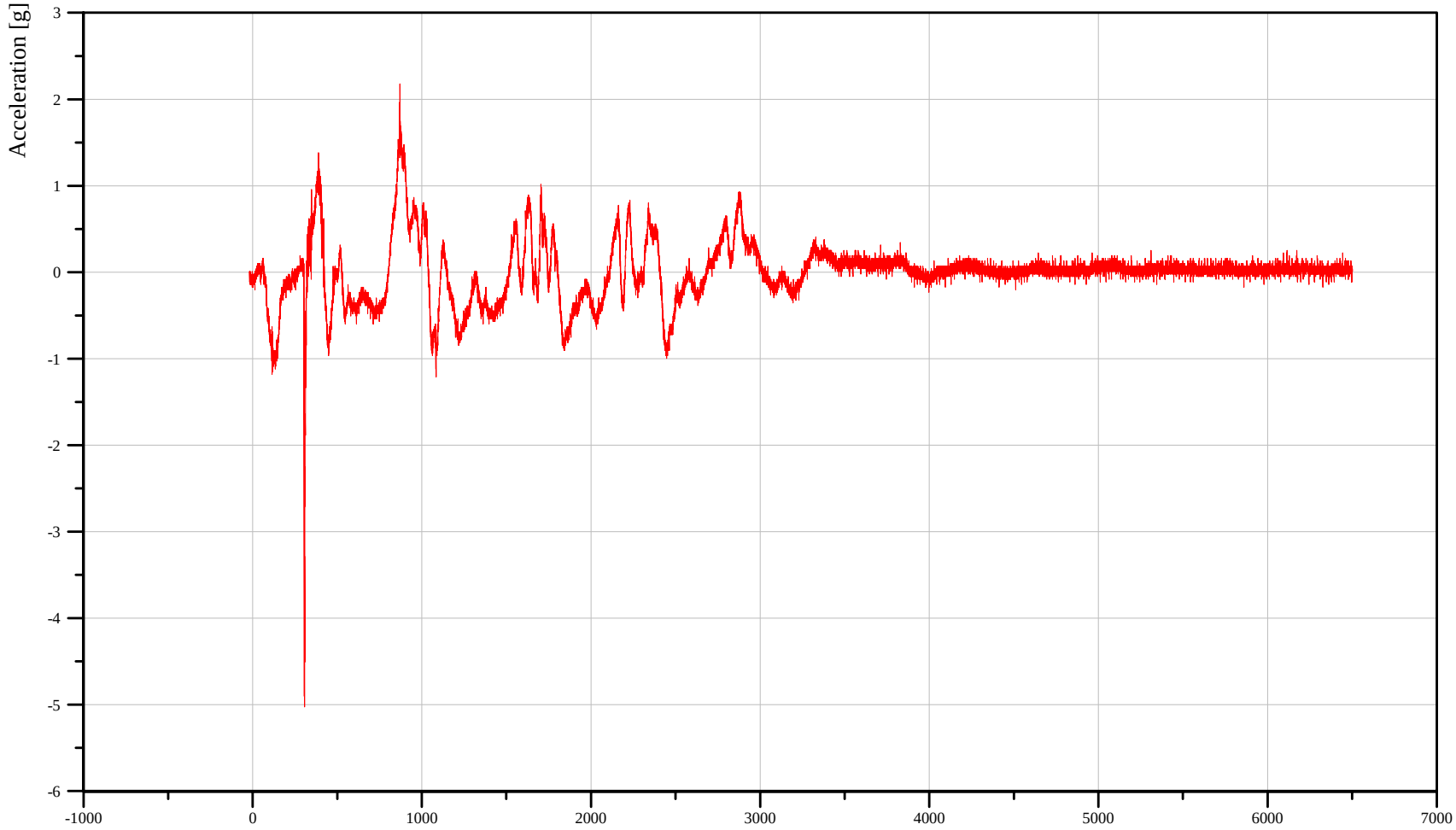
Driver Pelvis X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-5.03 g at 305.76 ms

Max. Value
2.18 g at 869.44 ms

FMVSS 208 Rollover 2007 Ford Expedition

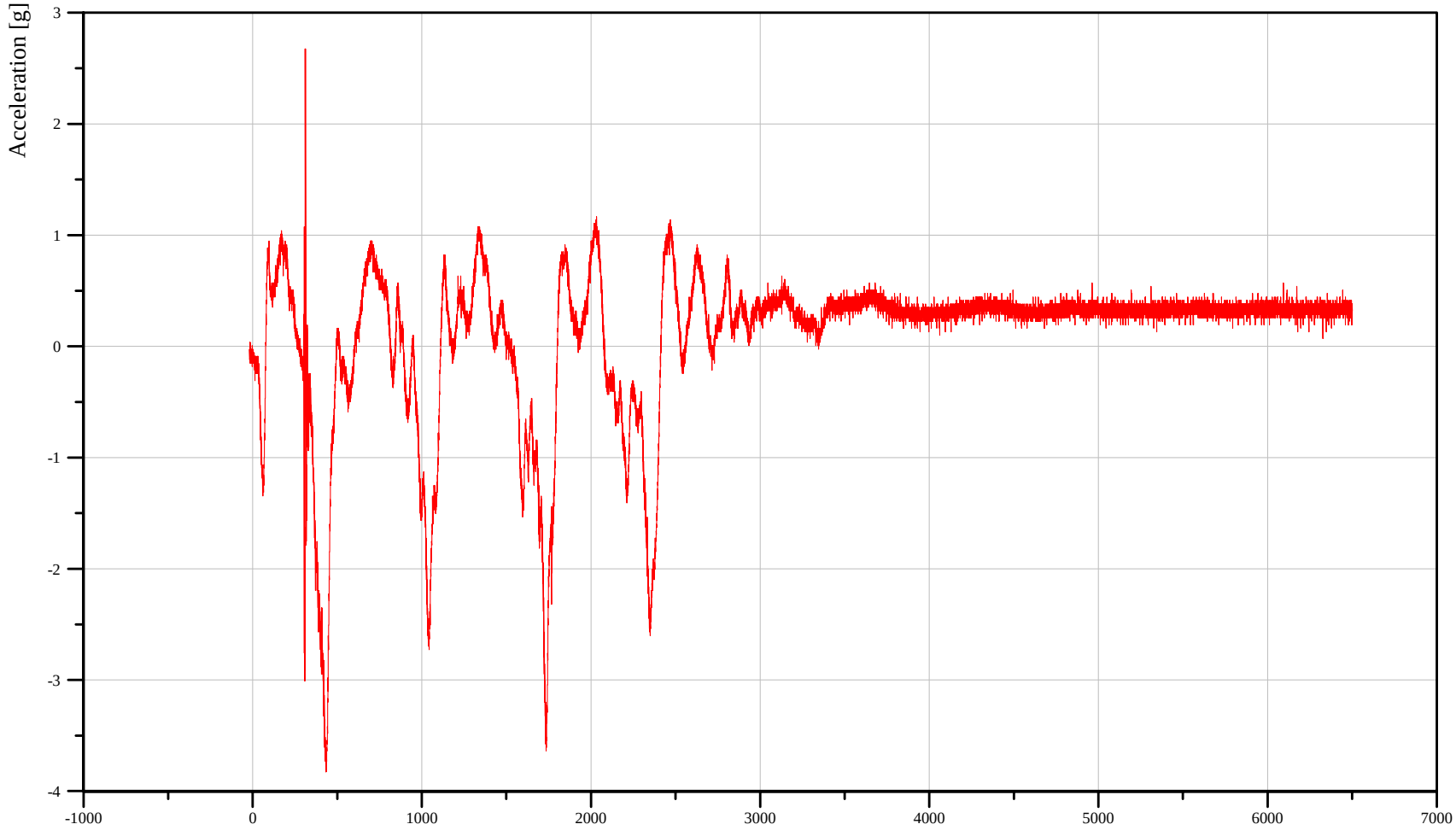
Driver Pelvis Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-3.83 g at 431.60 ms

Max. Value
2.68 g at 310.56 ms

FMVSS 208 Rollover 2007 Ford Expedition

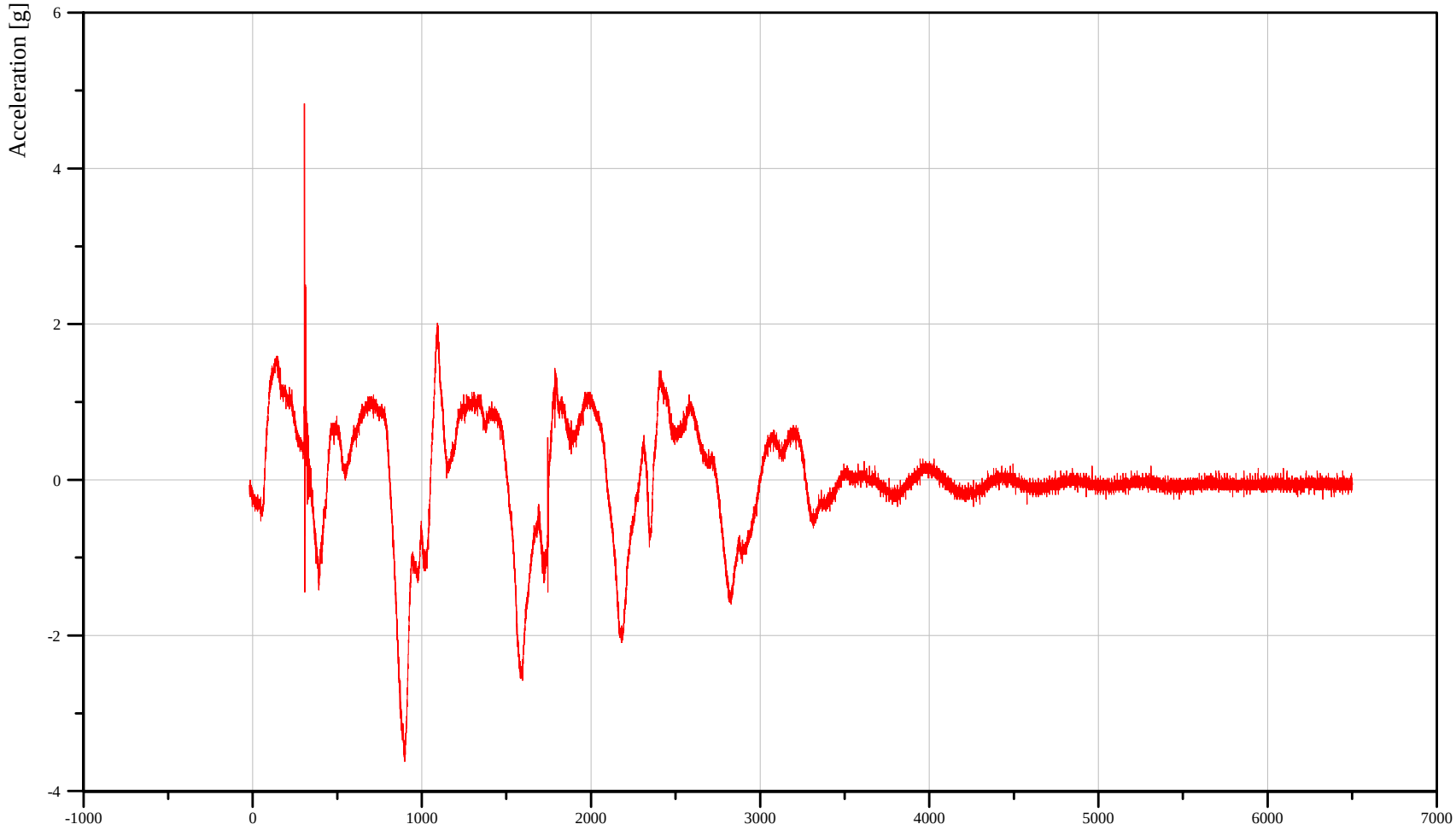
Driver Pelvis Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-3.62 g at 896.56 ms

Max. Value
4.83 g at 305.04 ms

FMVSS 208 Rollover 2007 Ford Expedition

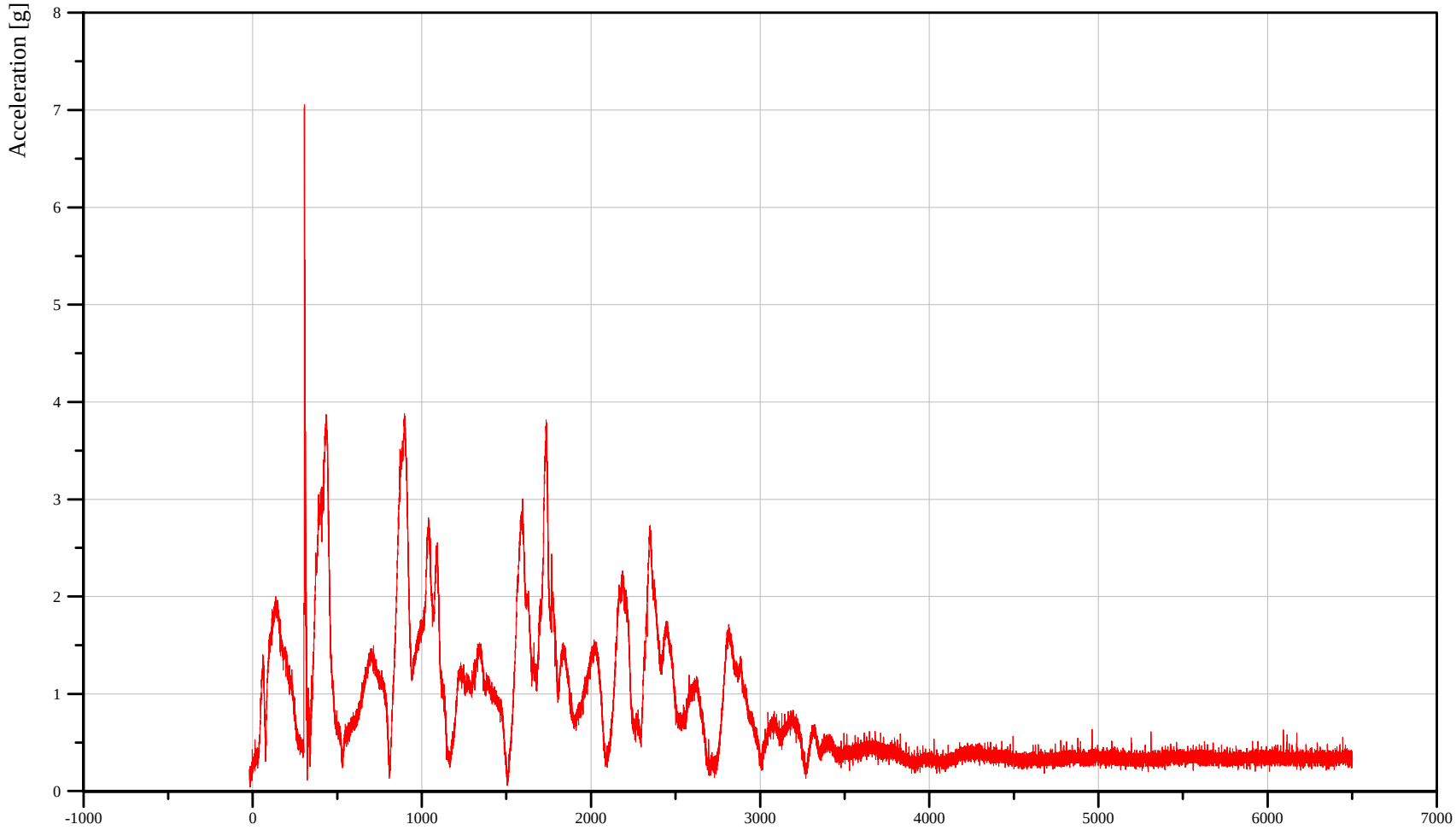
Driver Pelvis Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11PELVCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.04 g at -16.48 ms

Max. Value
7.06 g at 305.28 ms

FMVSS 208 Rollover 2007 Ford Expedition

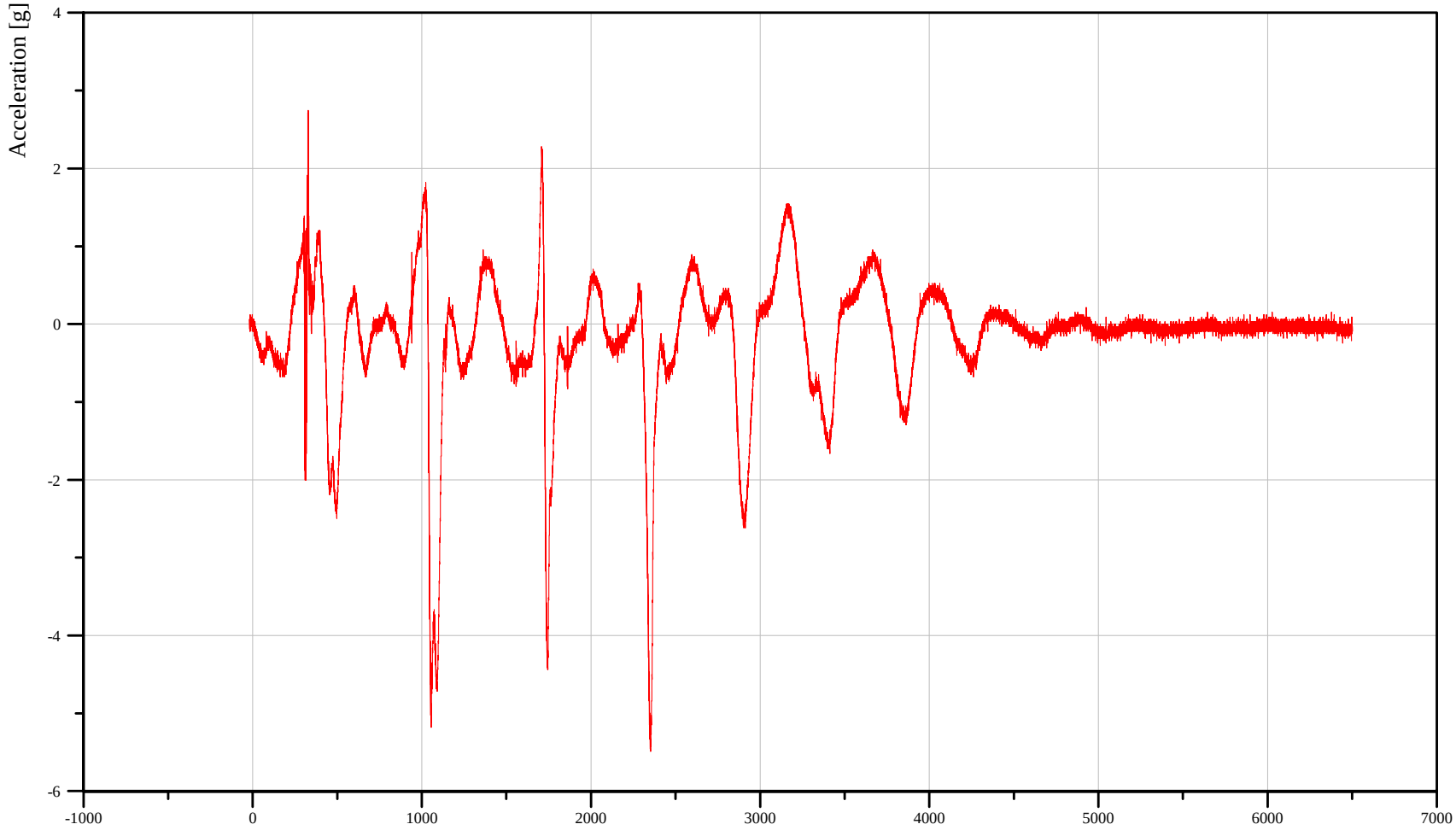
Right Front Passenger Head X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-5.49 g at 2,351.68 ms

Max. Value
2.74 g at 327.12 ms

FMVSS 208 Rollover 2007 Ford Expedition

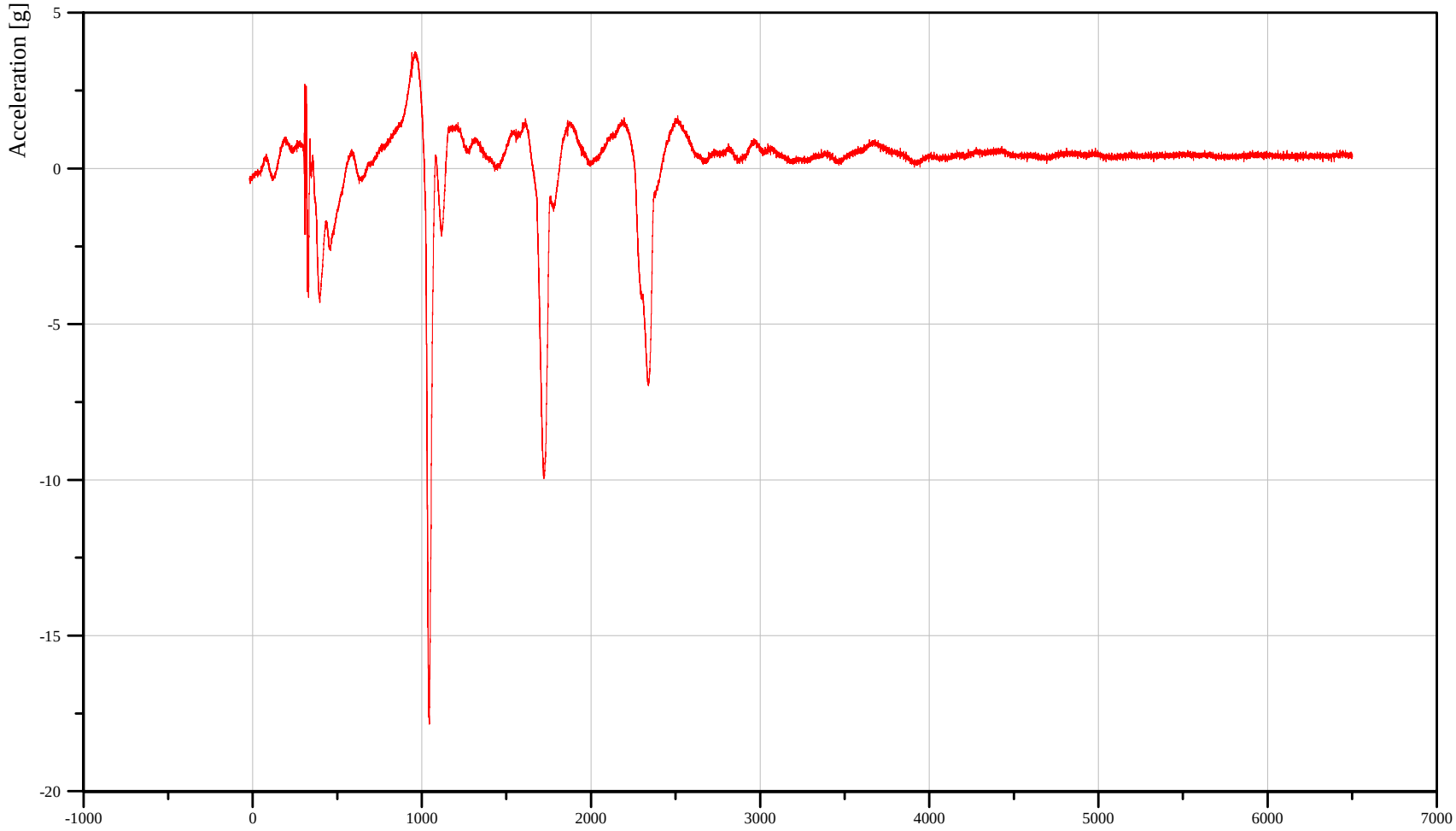
Right Front Passenger Head Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-17.84 g at 1,042.72 ms

Max. Value
3.76 g at 959.44 ms

FMVSS 208 Rollover 2007 Ford Expedition

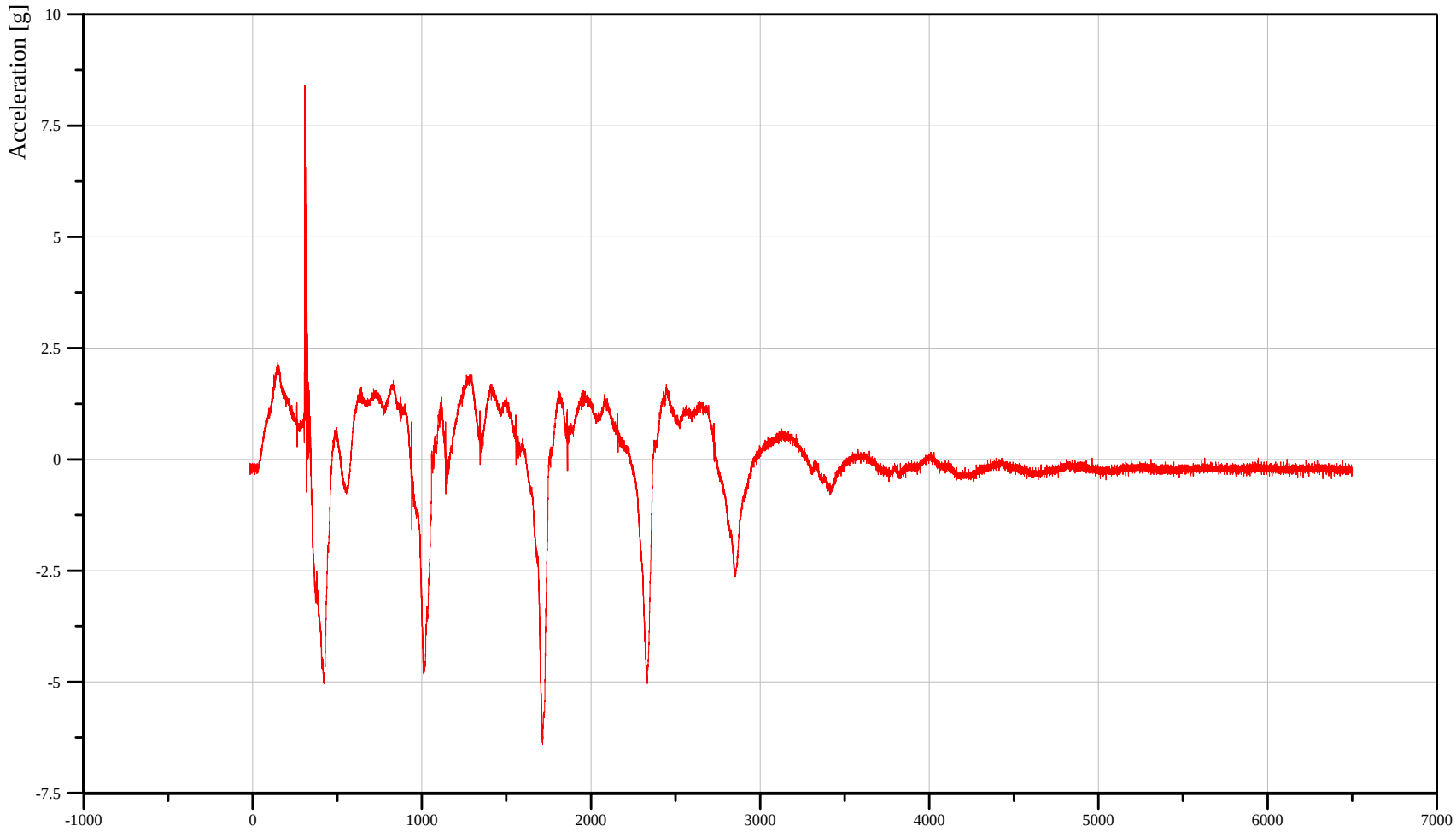
Right Front Passenger Head Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-6.41 g at 1,713.92 ms

Max. Value
8.40 g at 308.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

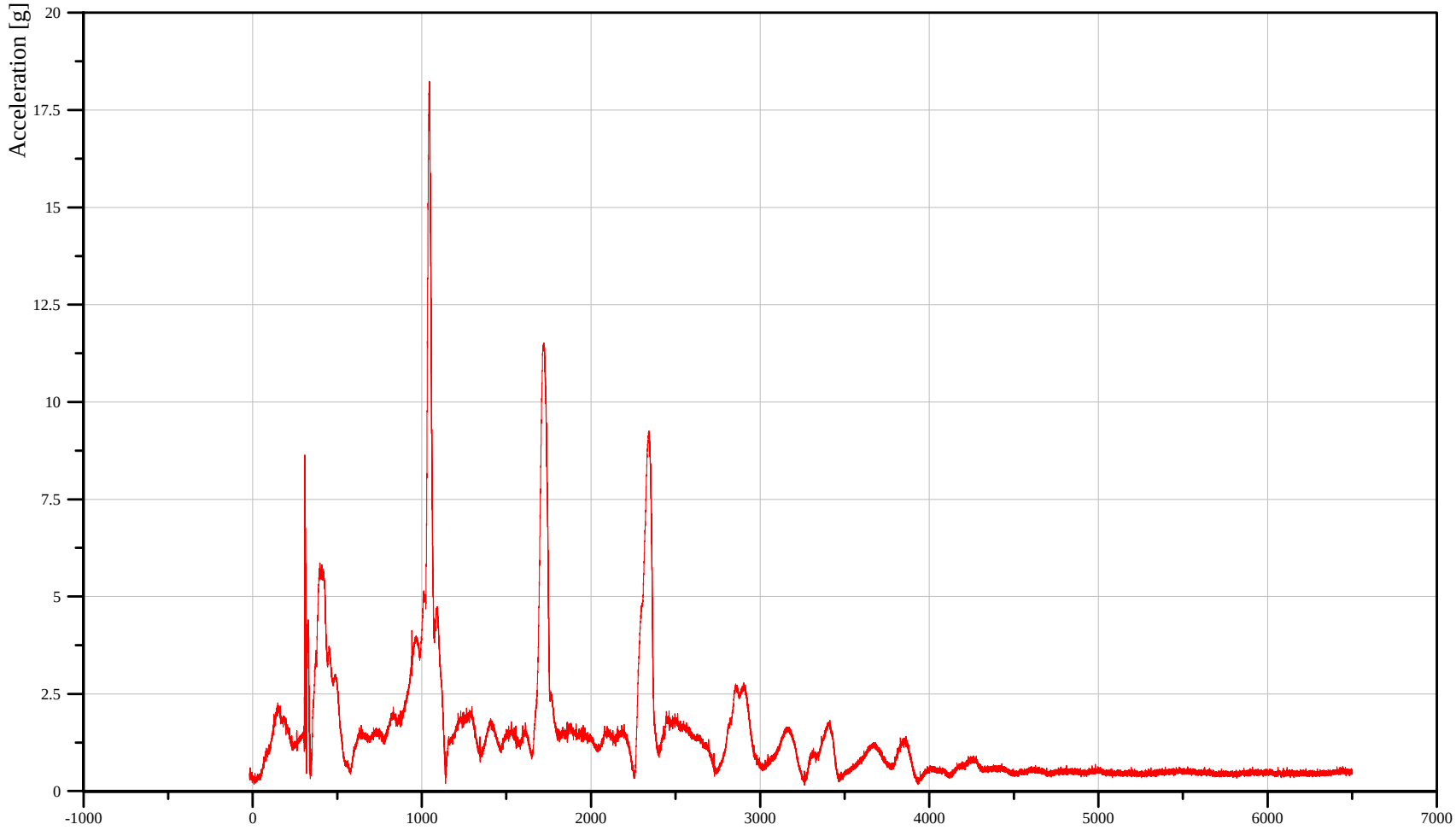
Right Front Passenger Head Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.16 g at 3,261.60 ms

Max. Value
18.23 g at 1,043.28 ms

FMVSS 208 Rollover 2007 Ford Expedition

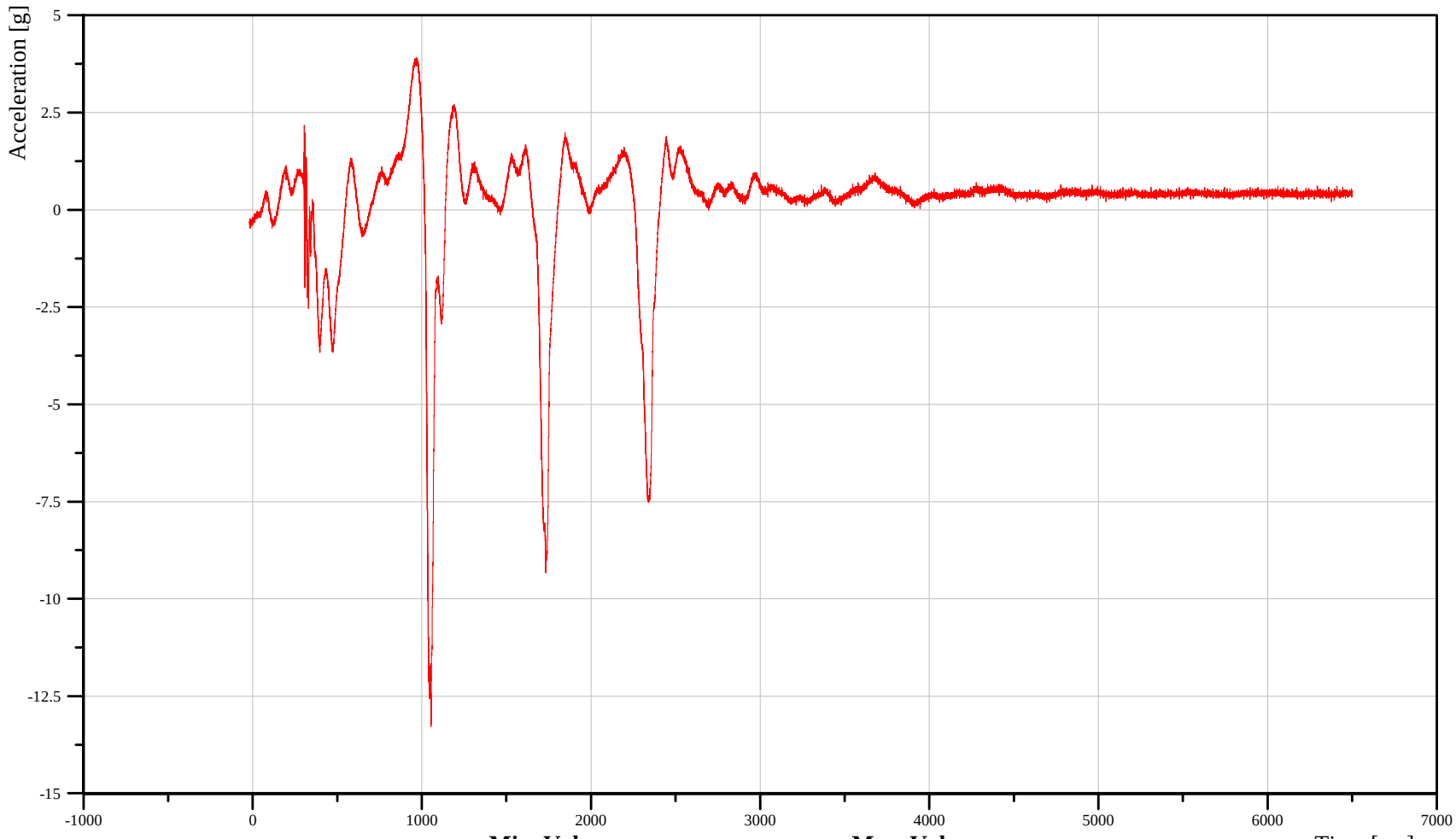
Right Front Passenger Head Front Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADFR00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-13.29 g at 1,053.84 ms

Max. Value
3.91 g at 966.32 ms

FMVSS 208 Rollover 2007 Ford Expedition

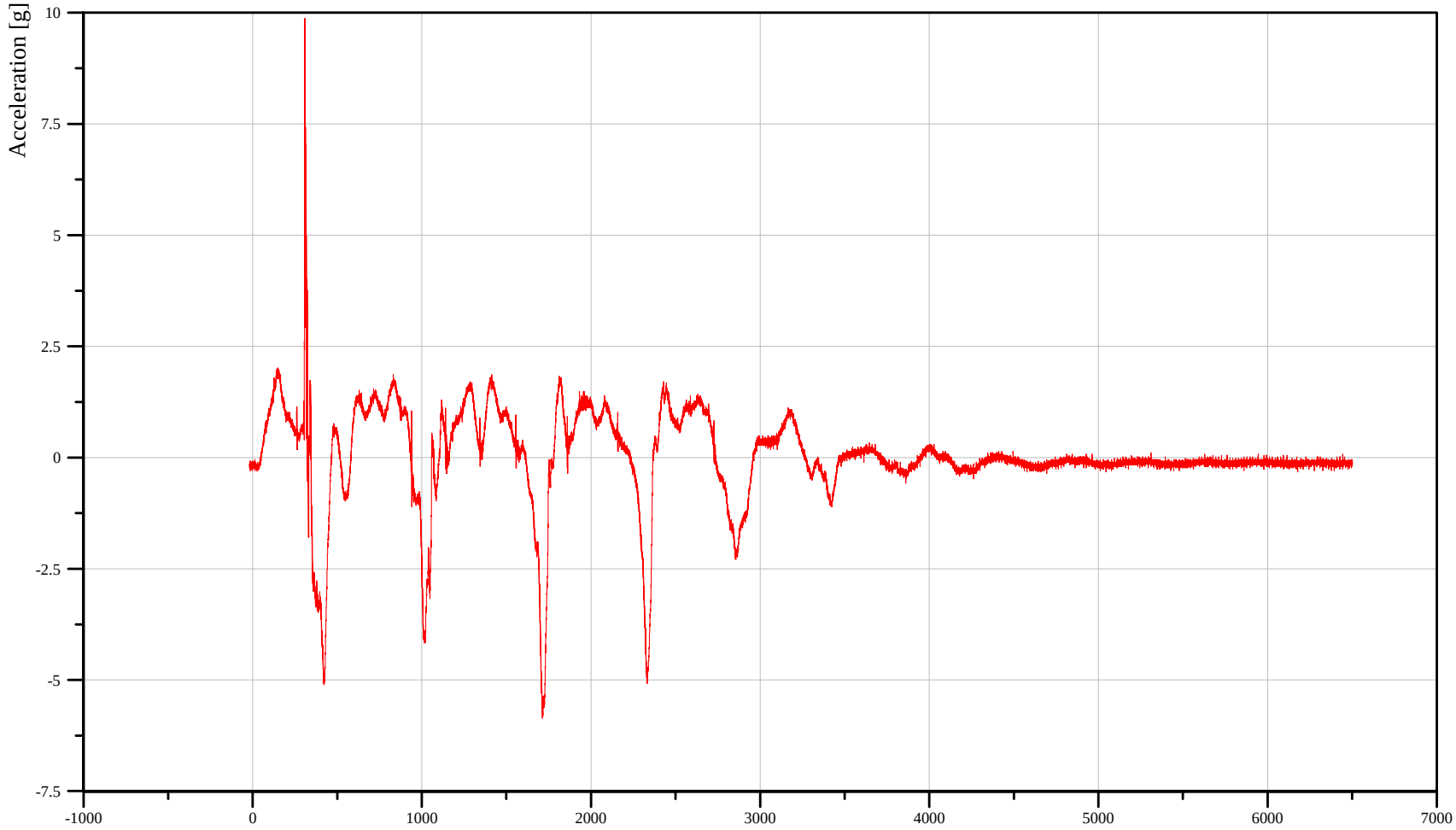
Right Front Passenger Head Front Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADFR00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-5.86 g at 1,712.56 ms

Max. Value
9.87 g at 308.48 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

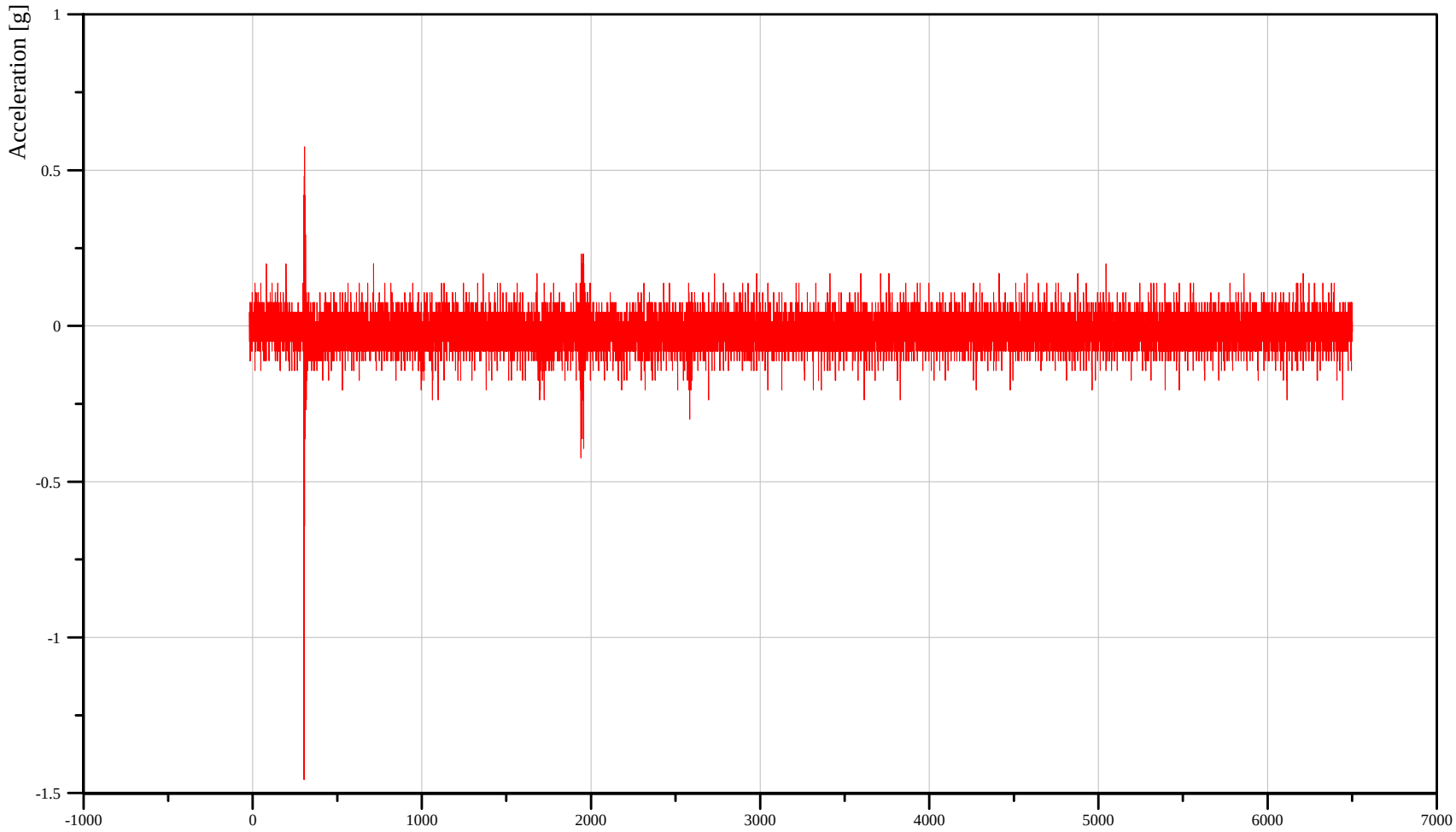
Right Front Passenger Head Top X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADUP00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-1.46 g at 303.28 ms

Max. Value
0.57 g at 306.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

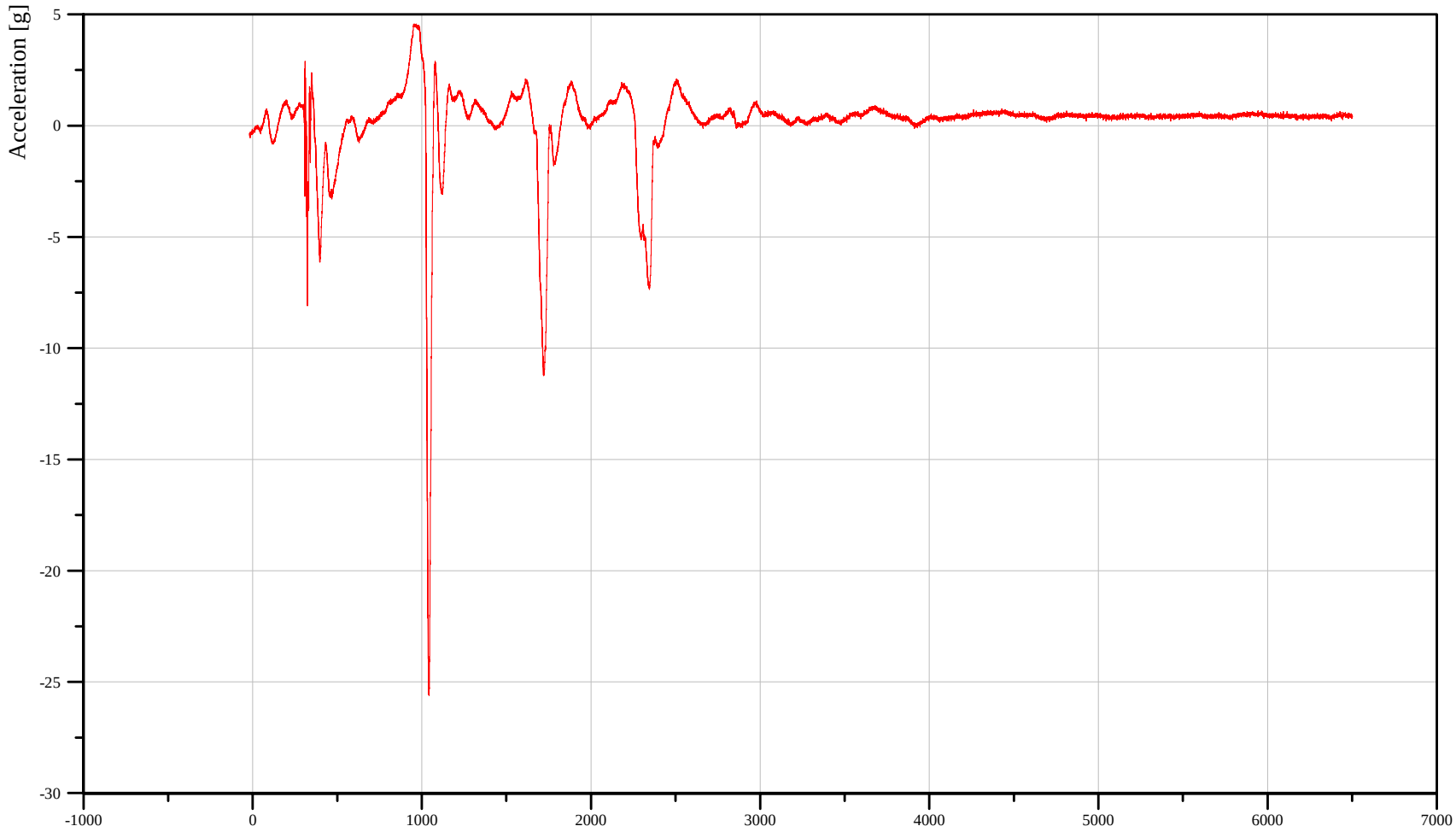
Right Front Passenger Head Top Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADUP00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-25.62 g at 1,041.84 ms

Max. Value
4.57 g at 950.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

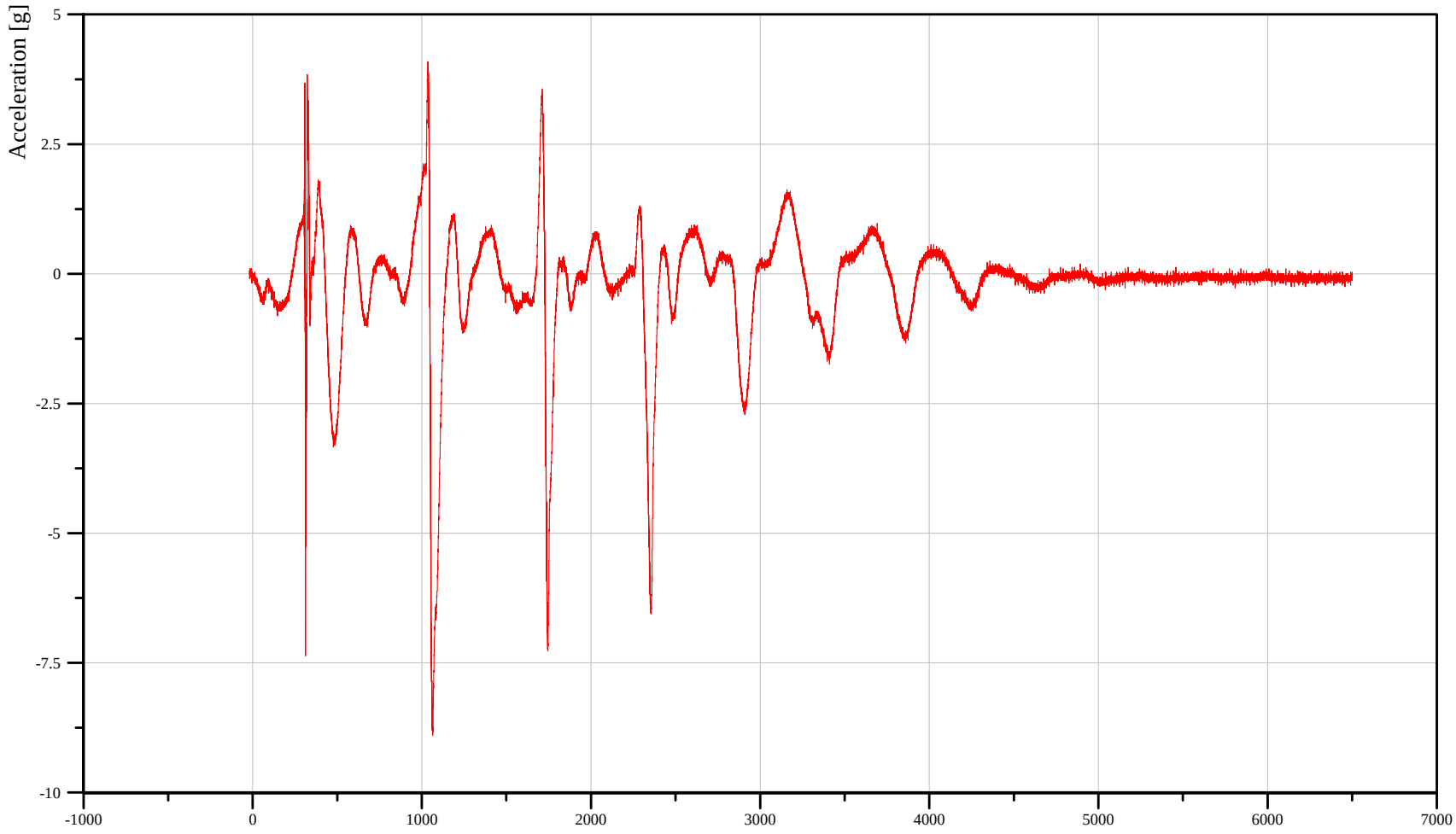
Right Front Passenger Head Left X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADLE00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-8.89 g at 1,063.76 ms

Max. Value
4.09 g at 1,036.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

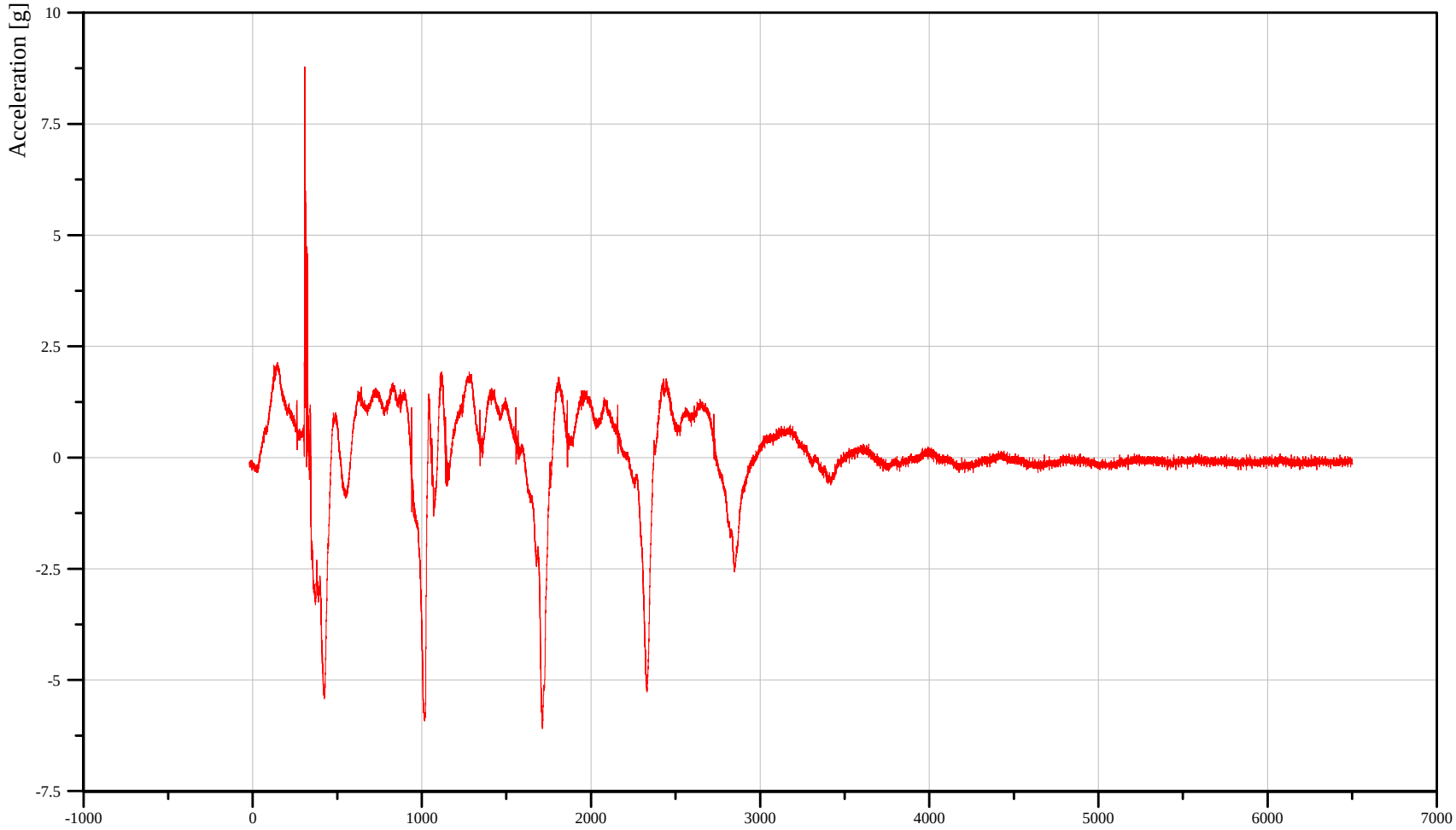
Right Front Passenger Head Left Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13HEADLE00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-6.10 g at 1,712.48 ms

Max. Value
8.79 g at 308.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

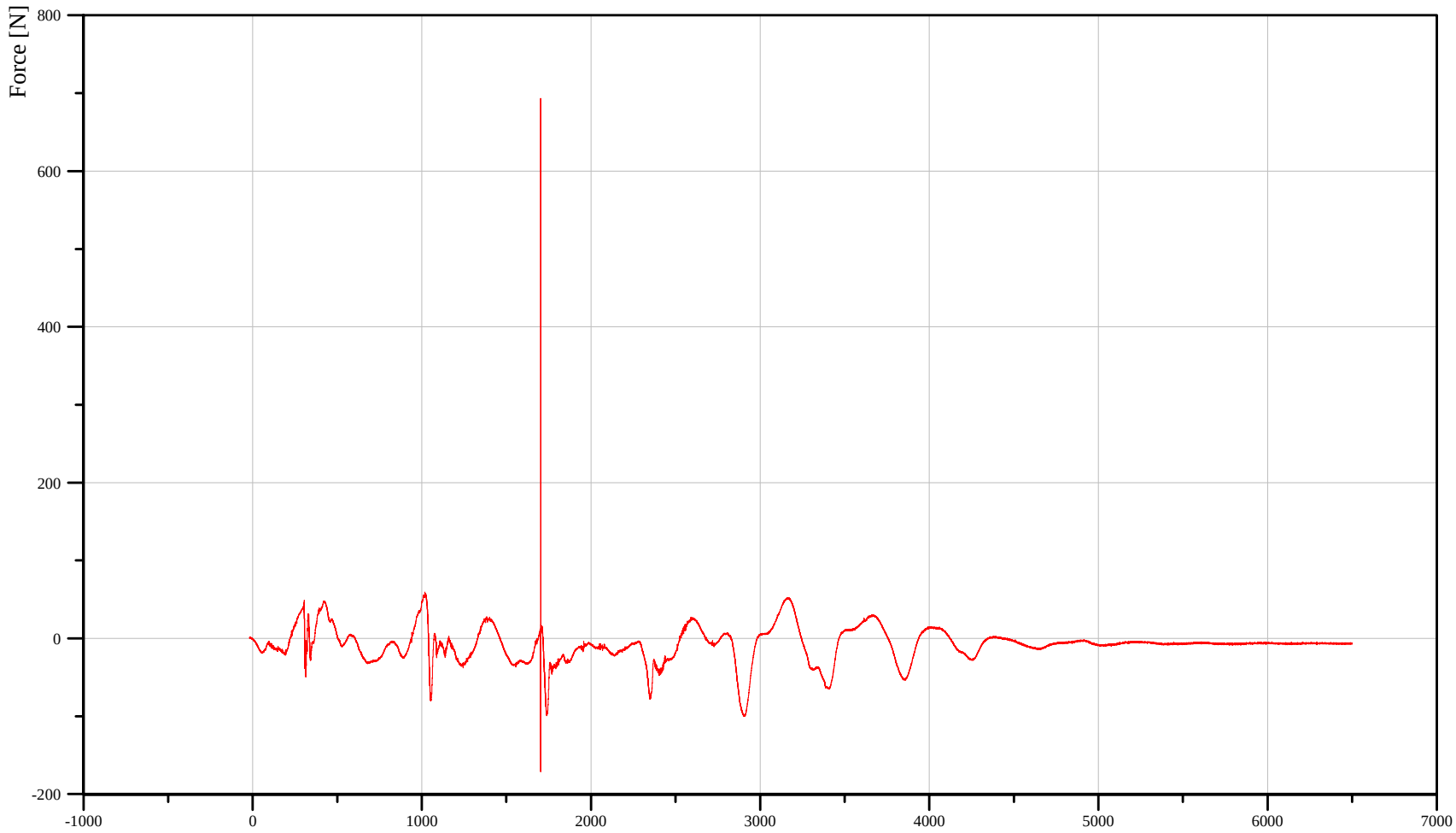
Right Front Passenger Upper Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-171.10 N at 1,701.36 ms

Max. Value
693.62 N at 1,701.04 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

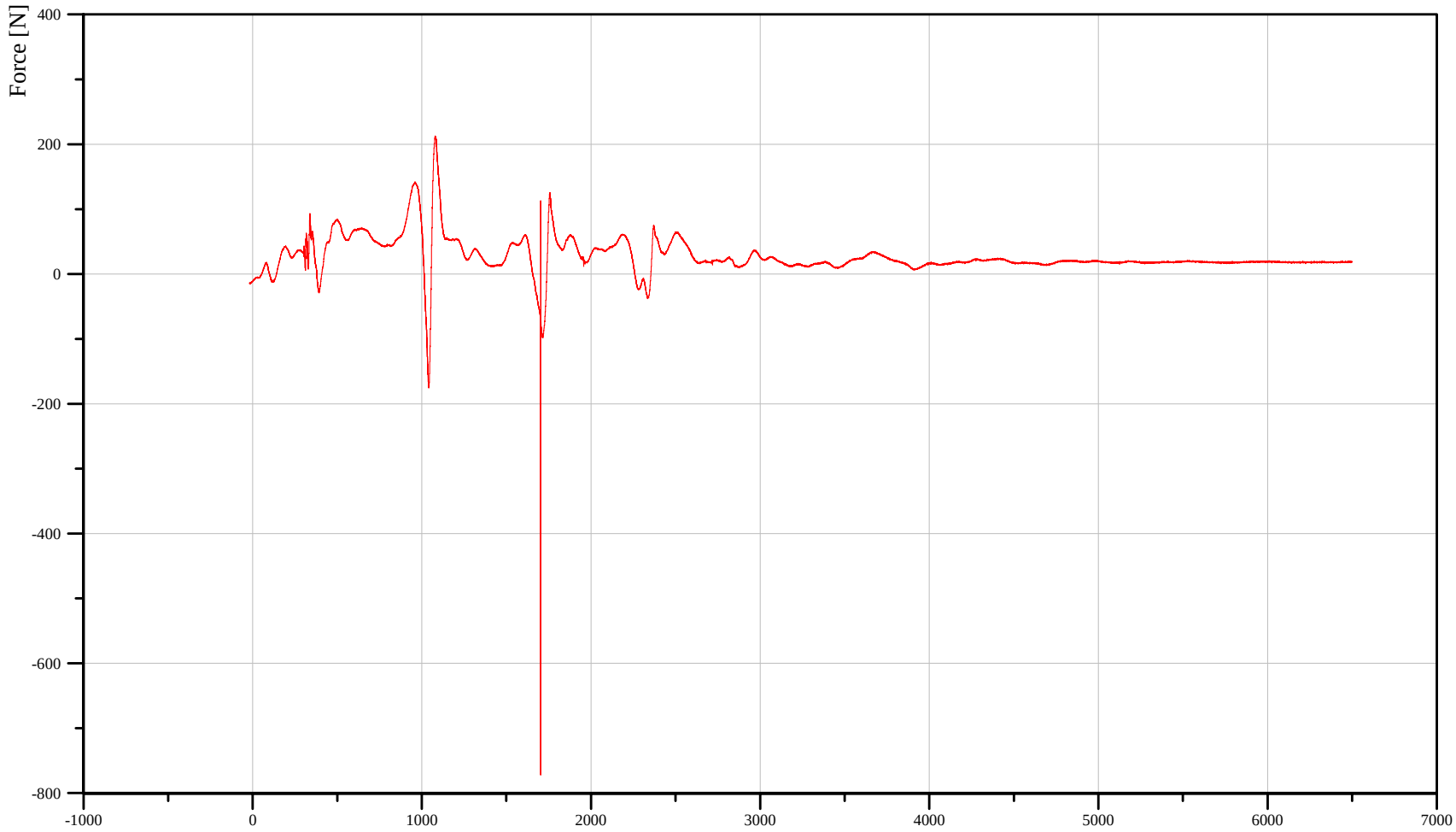
Right Front Passenger Upper Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-772.04 N at 1,701.04 ms

Max. Value
213.19 N at 1,078.72 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

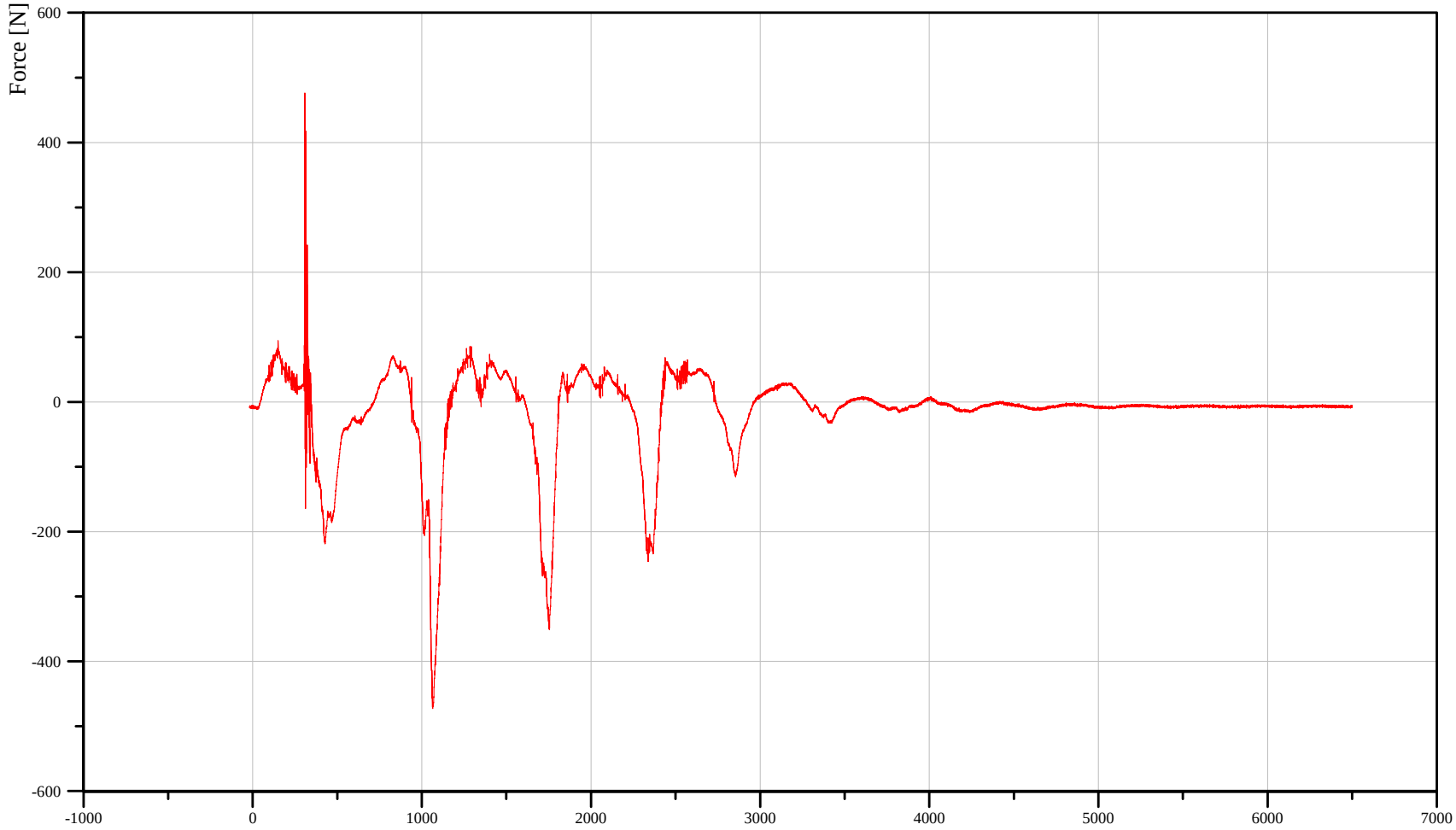
Right Front Passenger Upper Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-472.45 N at 1,064.24 ms

Max. Value
476.19 N at 307.84 ms

FMVSS 208 Rollover 2007 Ford Expedition

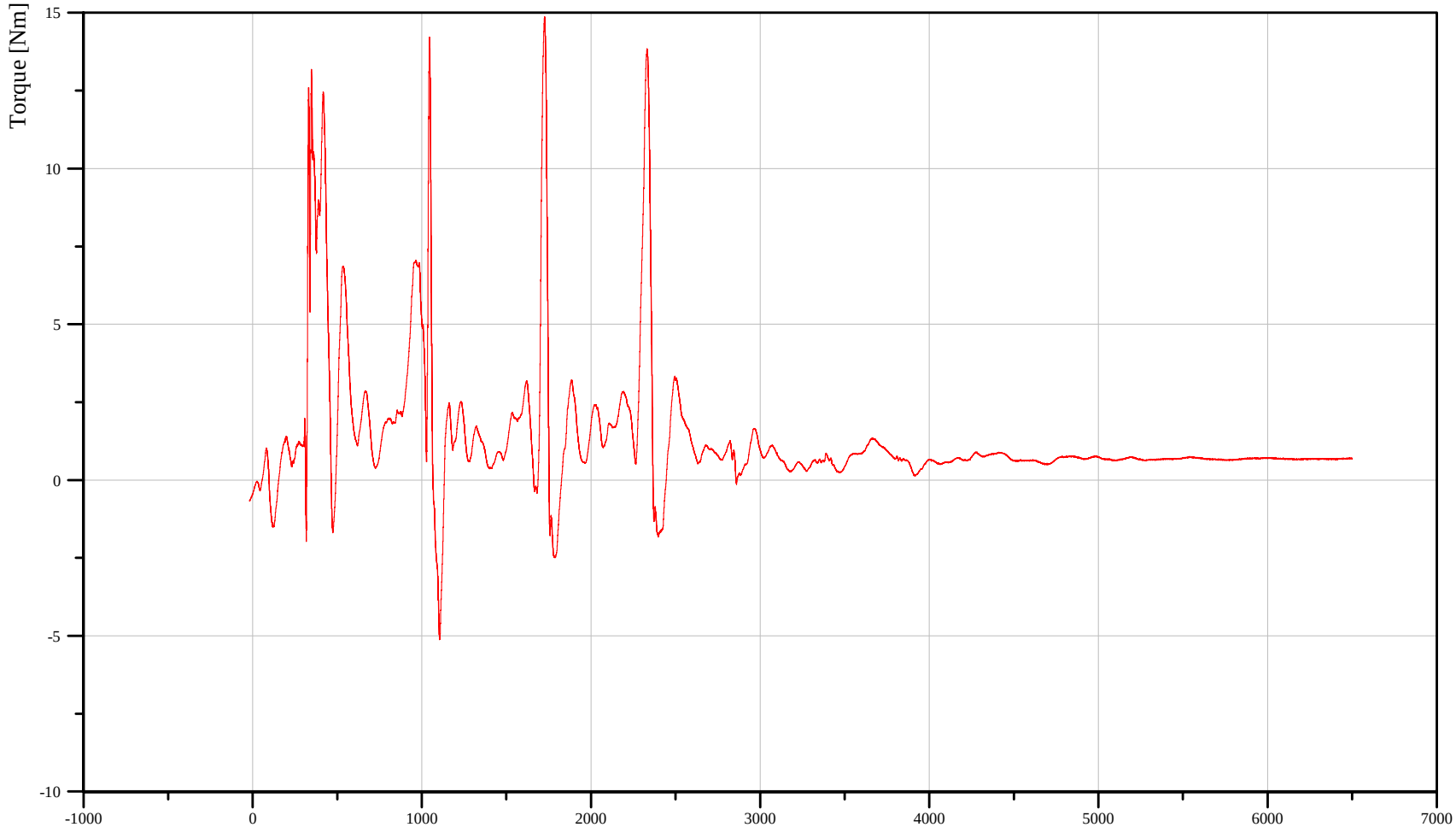
Right Front Passenger Upper Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-5.13 Nm at 1,104.16 ms

Max. Value
14.88 Nm at 1,725.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

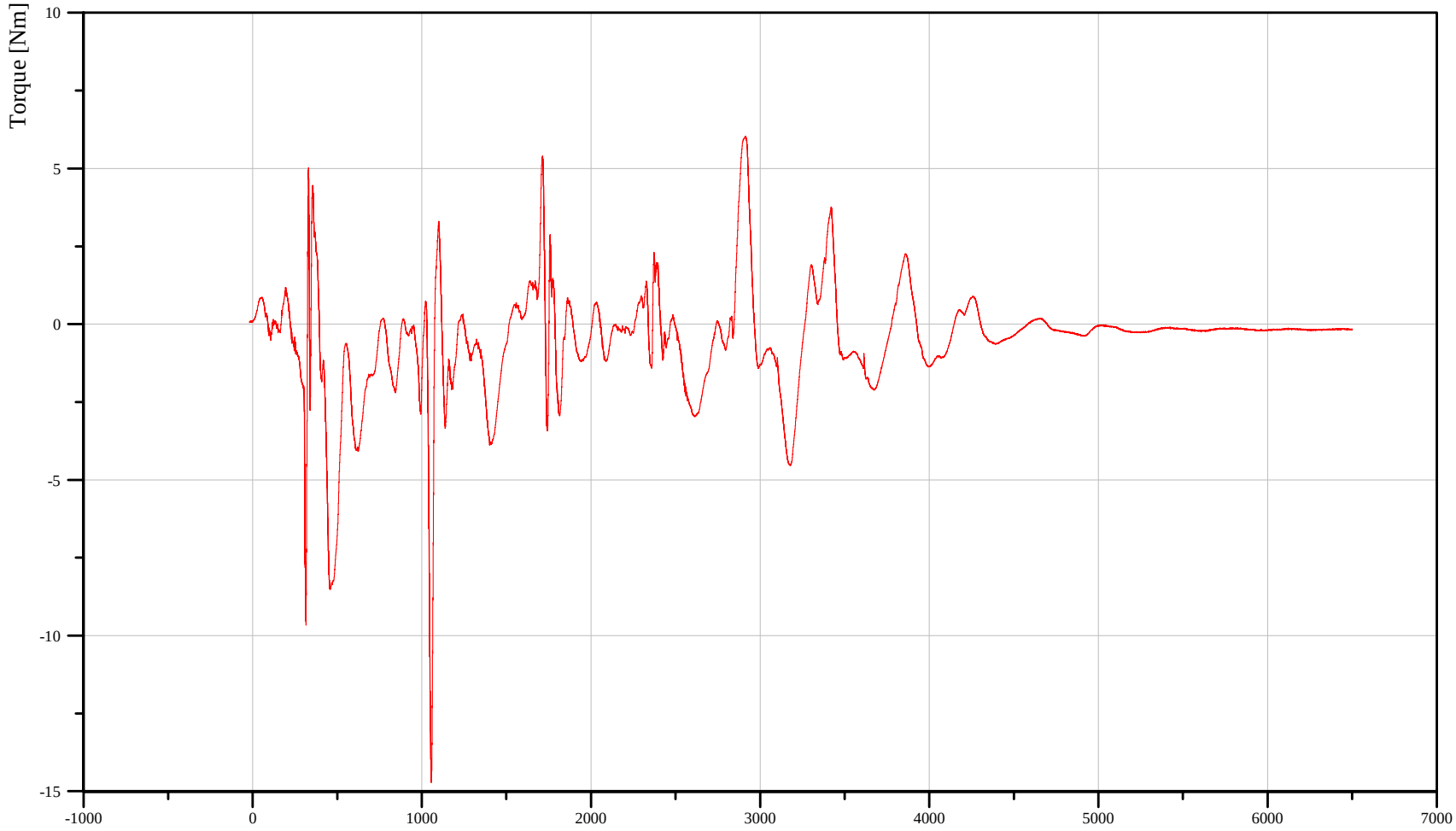
Right Front Passenger Upper Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-14.72 Nm at 1,055.44 ms

Max. Value
6.04 Nm at 2,912.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

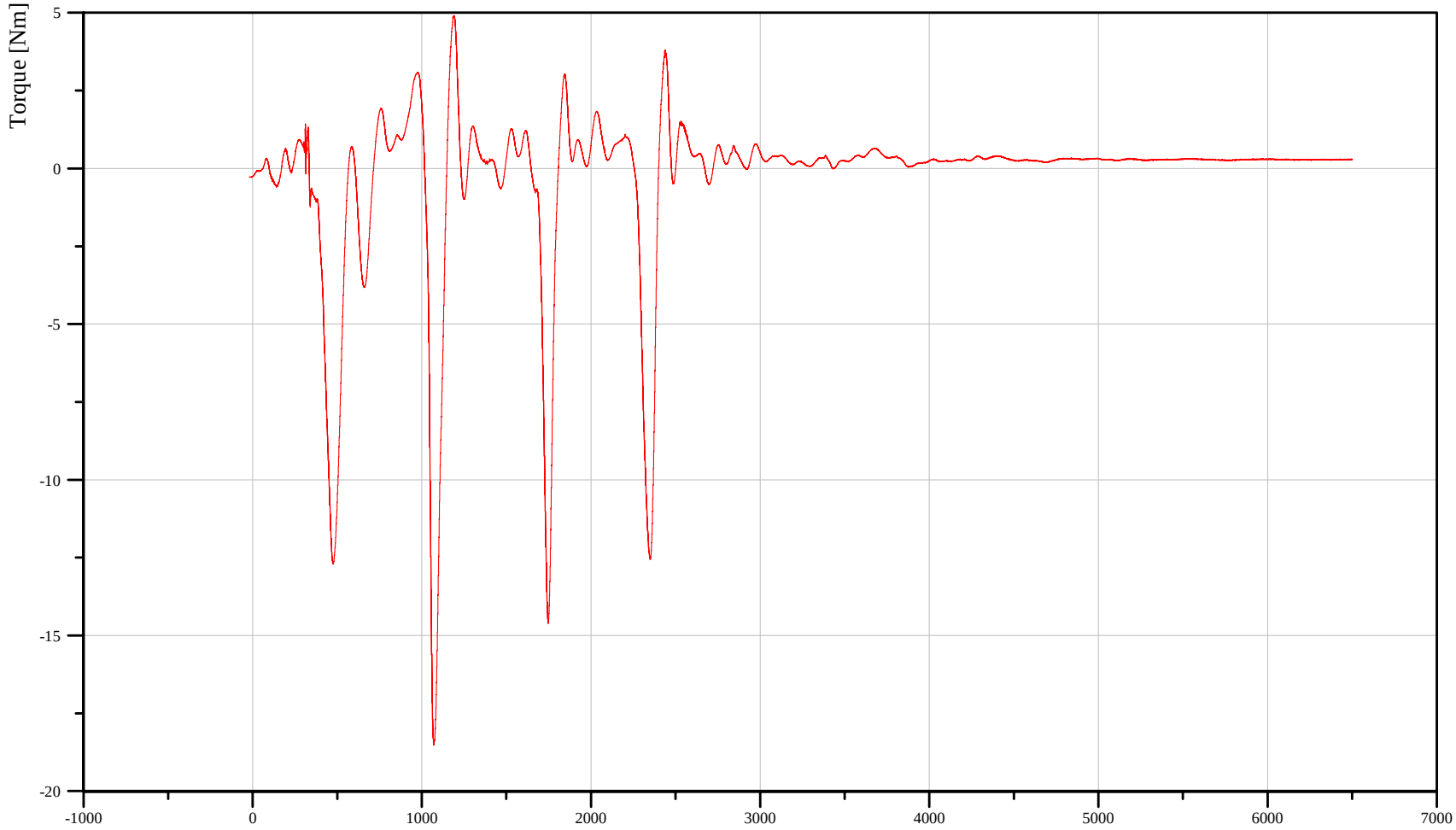
Right Front Passenger Upper Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-18.52 Nm at 1,069.84 ms

Max. Value
4.91 Nm at 1,188.16 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

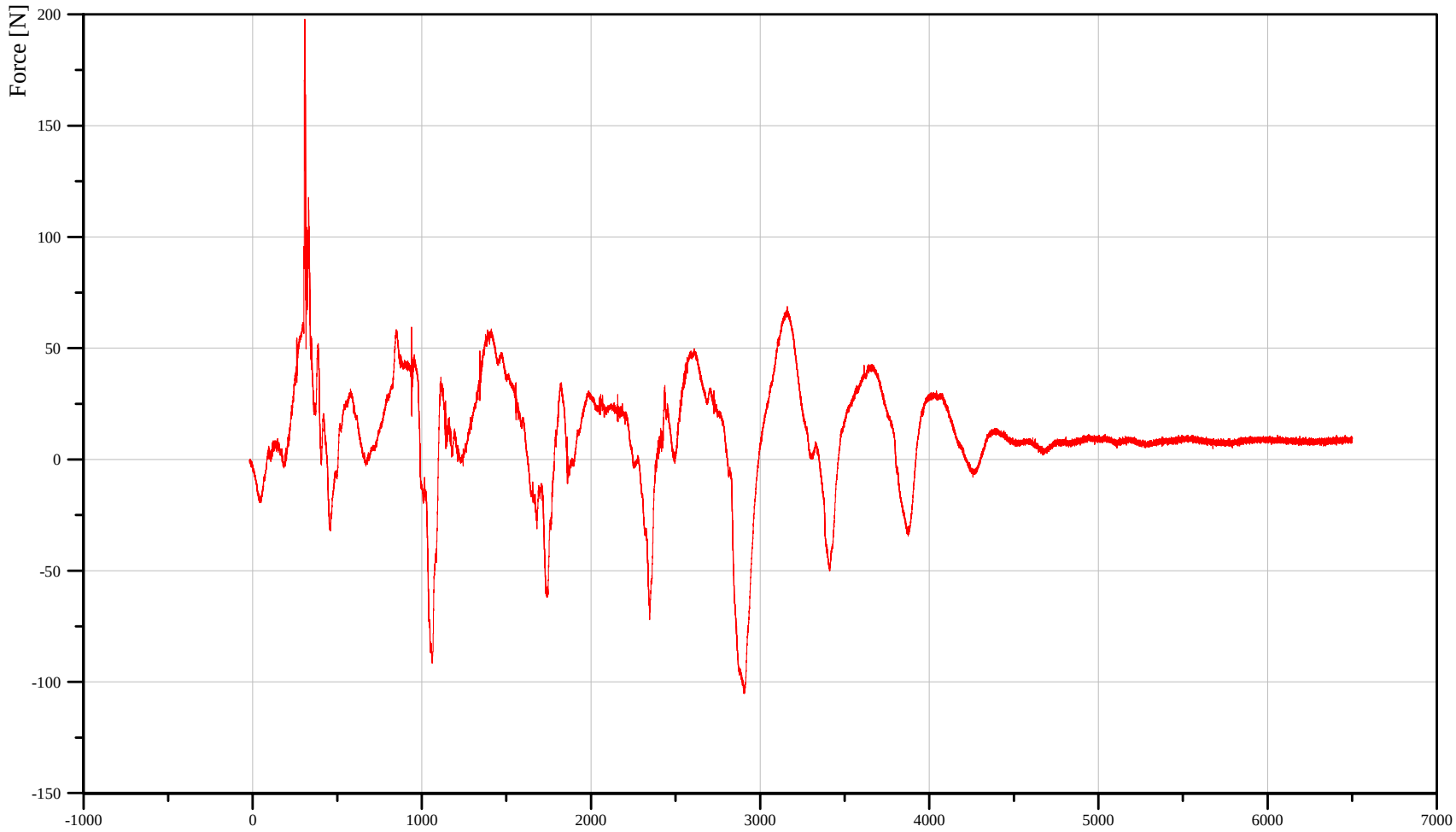
Right Front Passenger Lower Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-105.15 N at 2,904.08 ms

Max. Value
197.92 N at 307.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

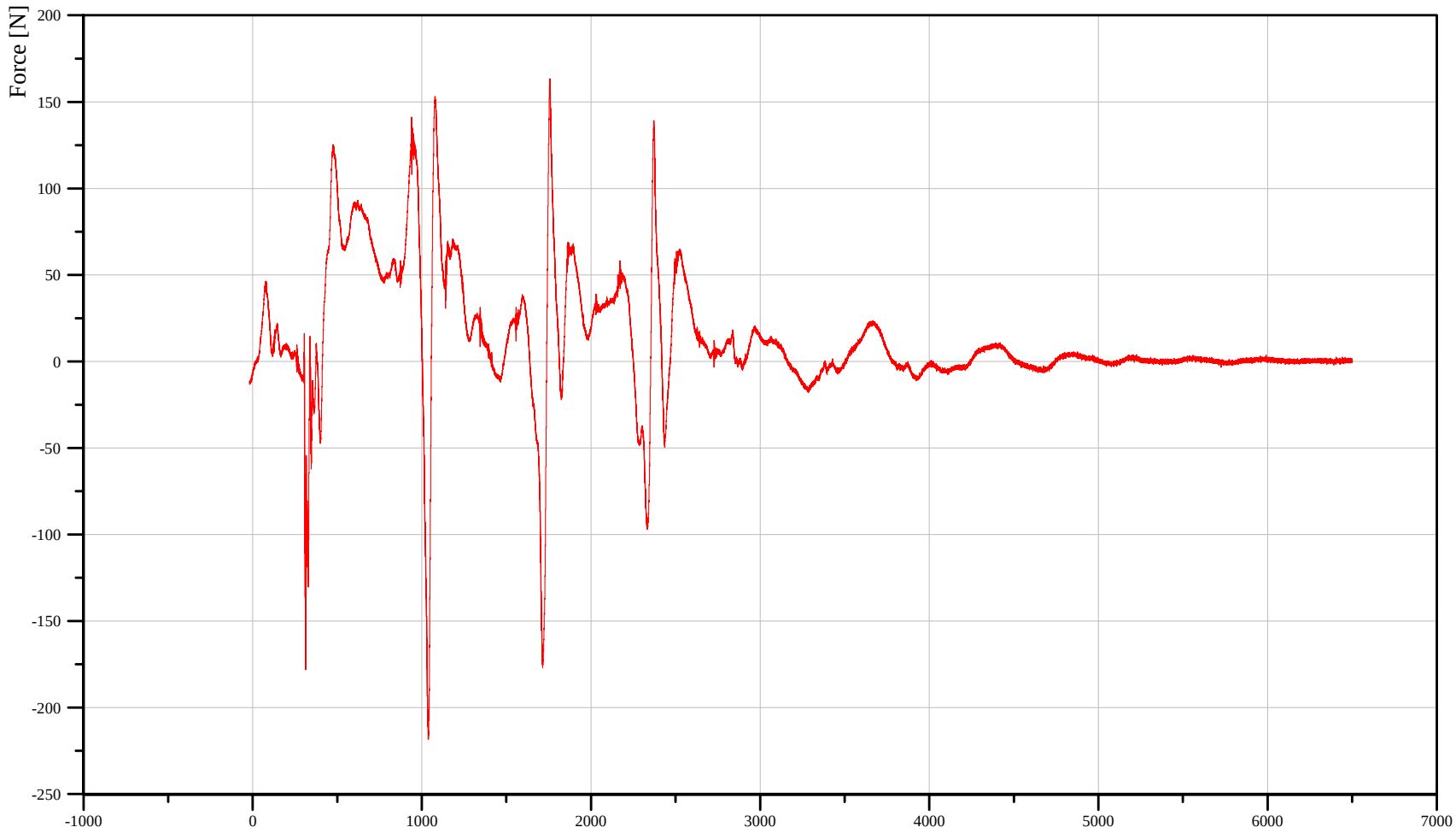
Right Front Passenger Lower Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-218.48 N at 1,037.68 ms

Max. Value
163.23 N at 1,756.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

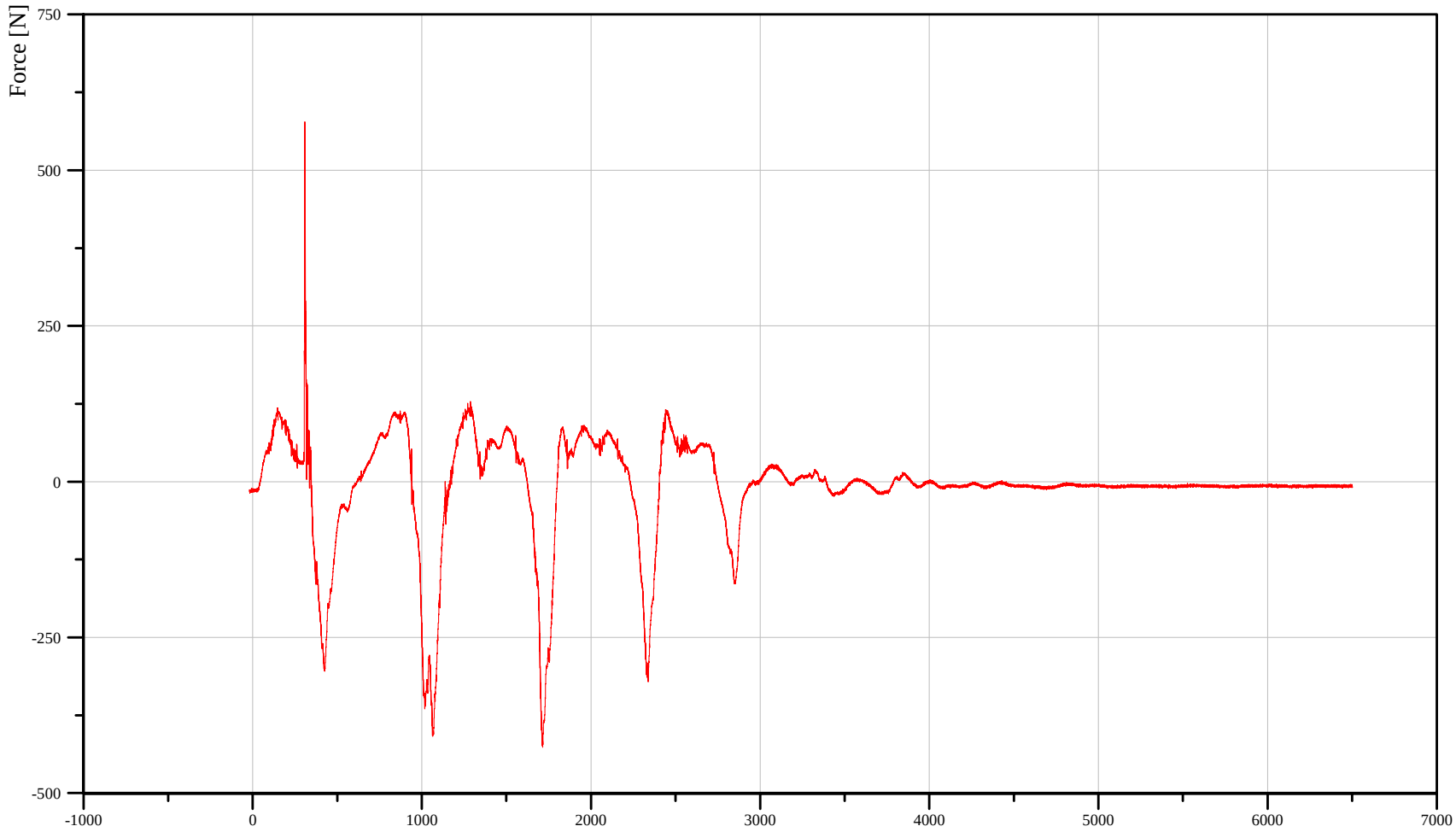
Right Front Passenger Lower Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-426.51 N at 1,714.40 ms

Max. Value
577.67 N at 307.68 ms

FMVSS 208 Rollover 2007 Ford Expedition

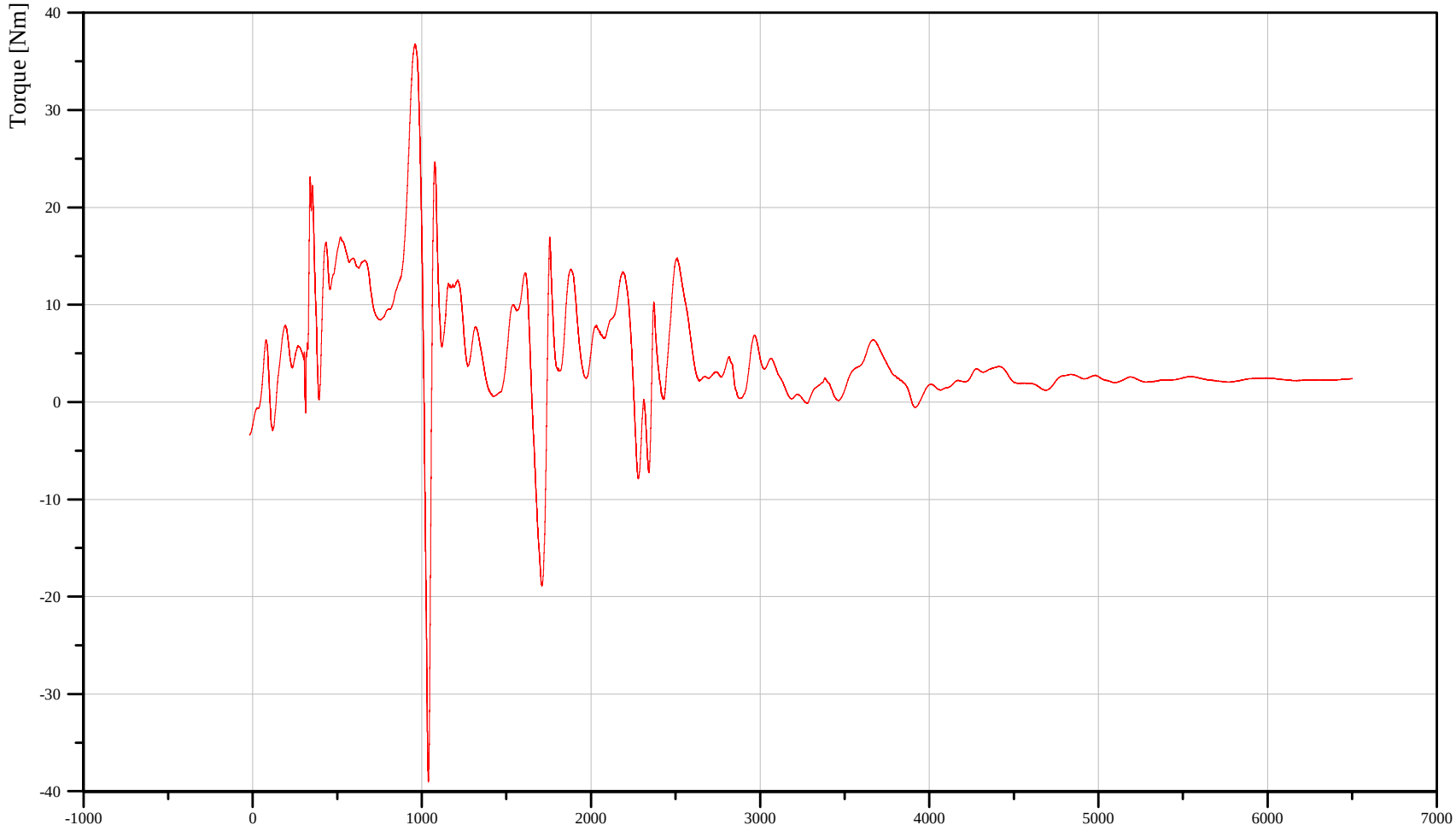
Right Front Passenger Lower Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-39.05 Nm at 1,038.56 ms

Max. Value
36.81 Nm at 959.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

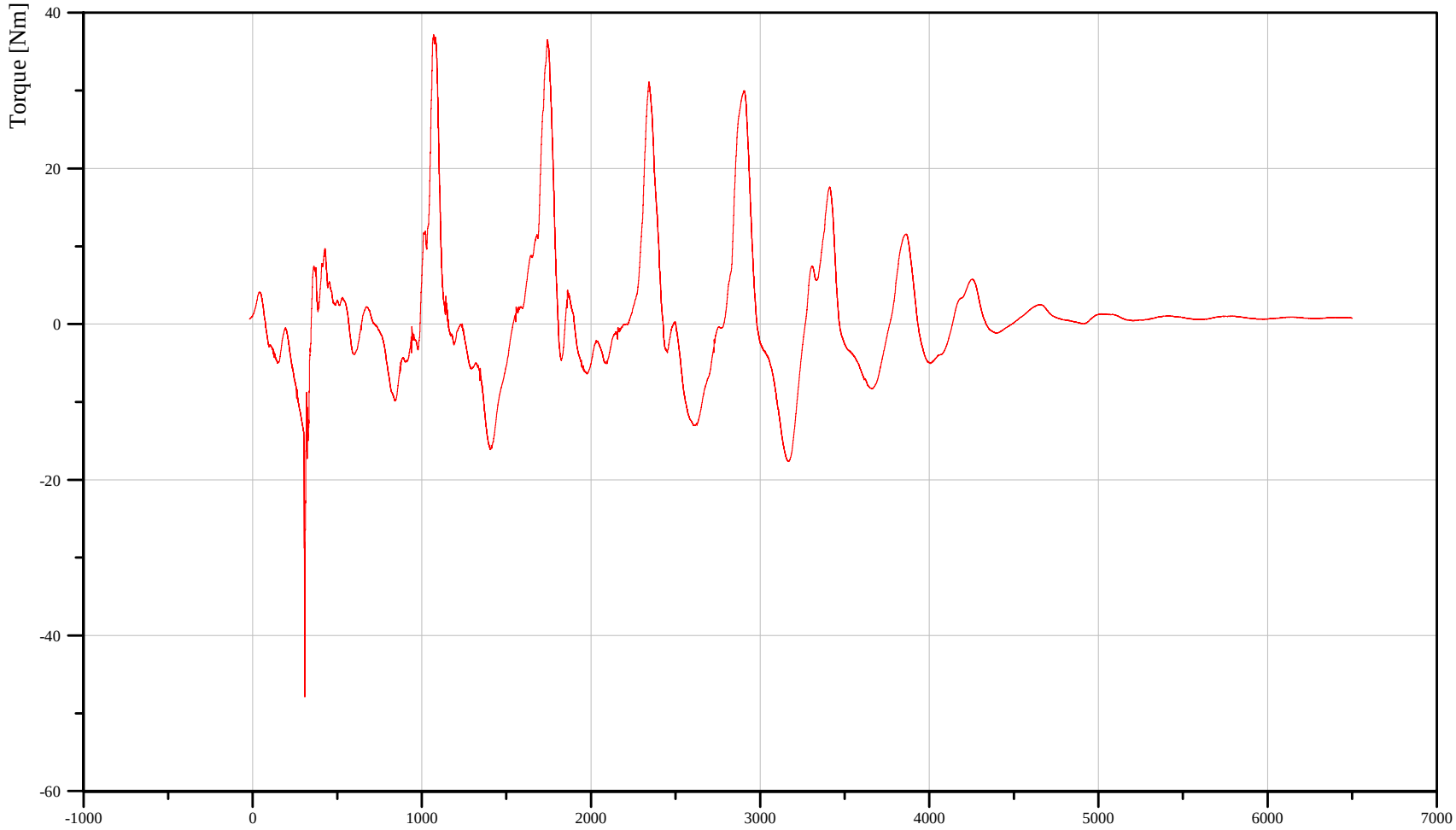
Right Front Passenger Lower Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-47.90 Nm at 307.76 ms

Max. Value
37.19 Nm at 1,068.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

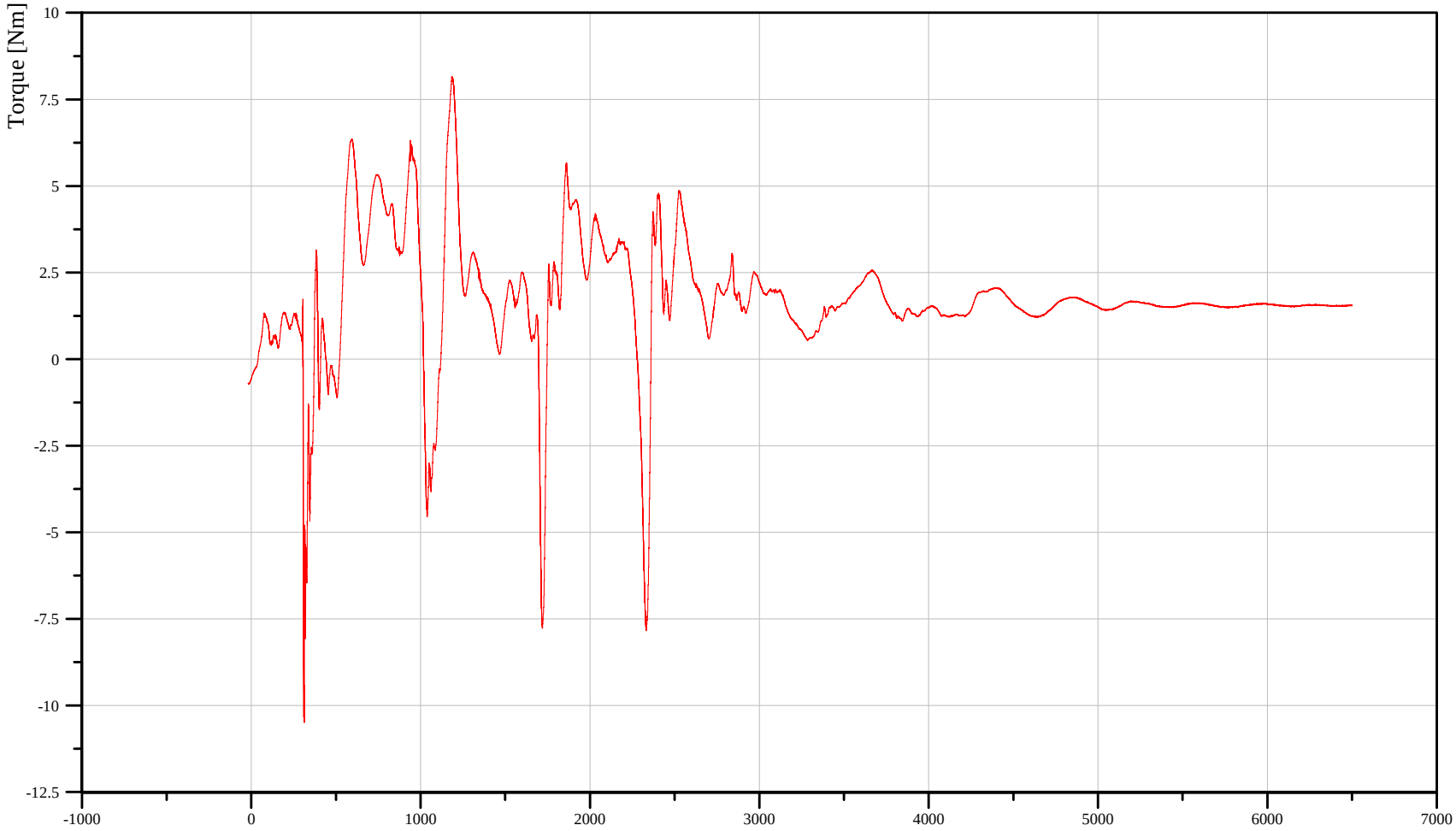
Right Front Passenger Lower Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13NECKLO00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-10.49 Nm at 312.16 ms

Max. Value
8.16 Nm at 1,185.68 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

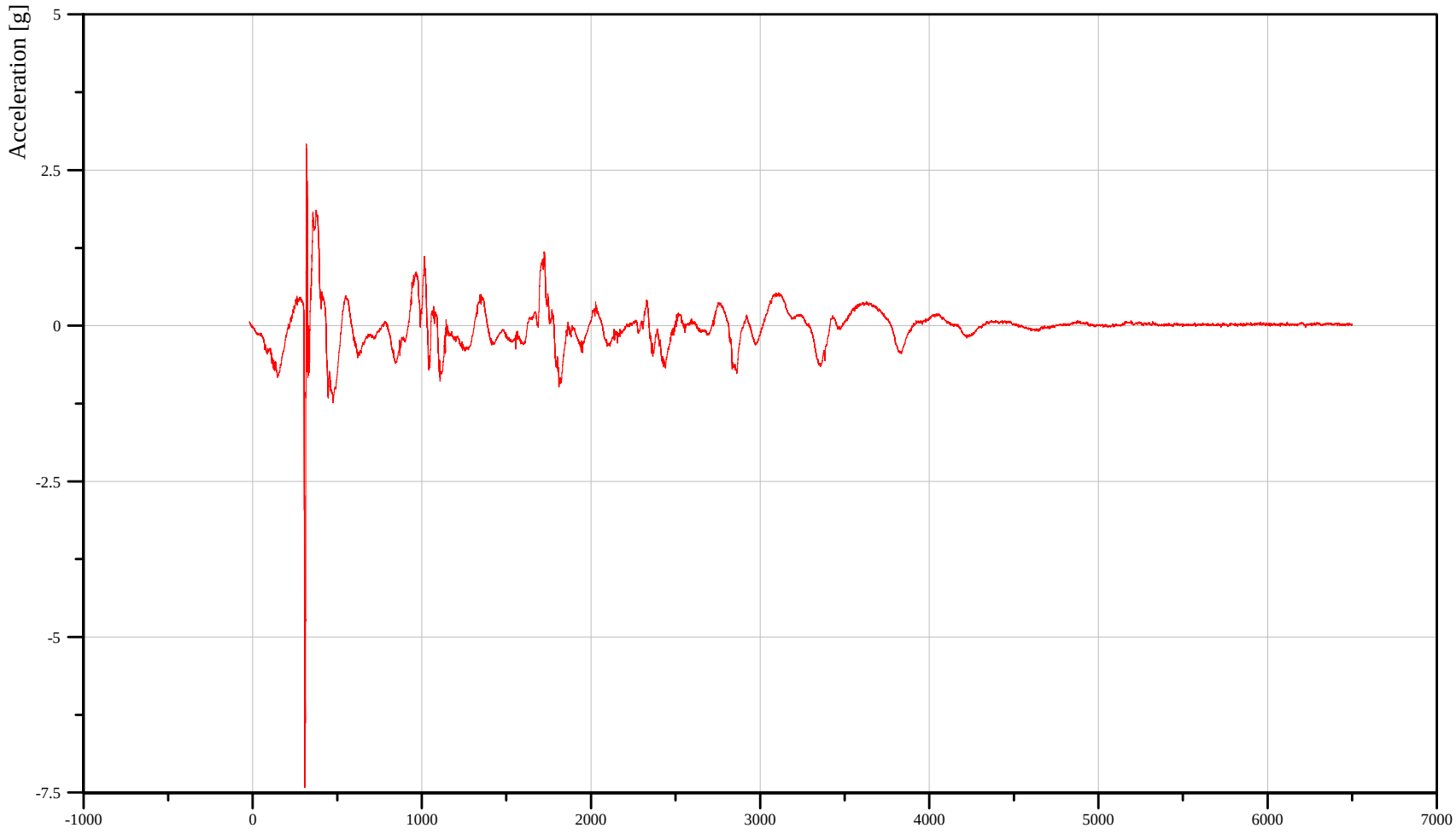
Right Front Passenger Chest X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-7.42 g at 307.44 ms

Max. Value
2.92 g at 317.36 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

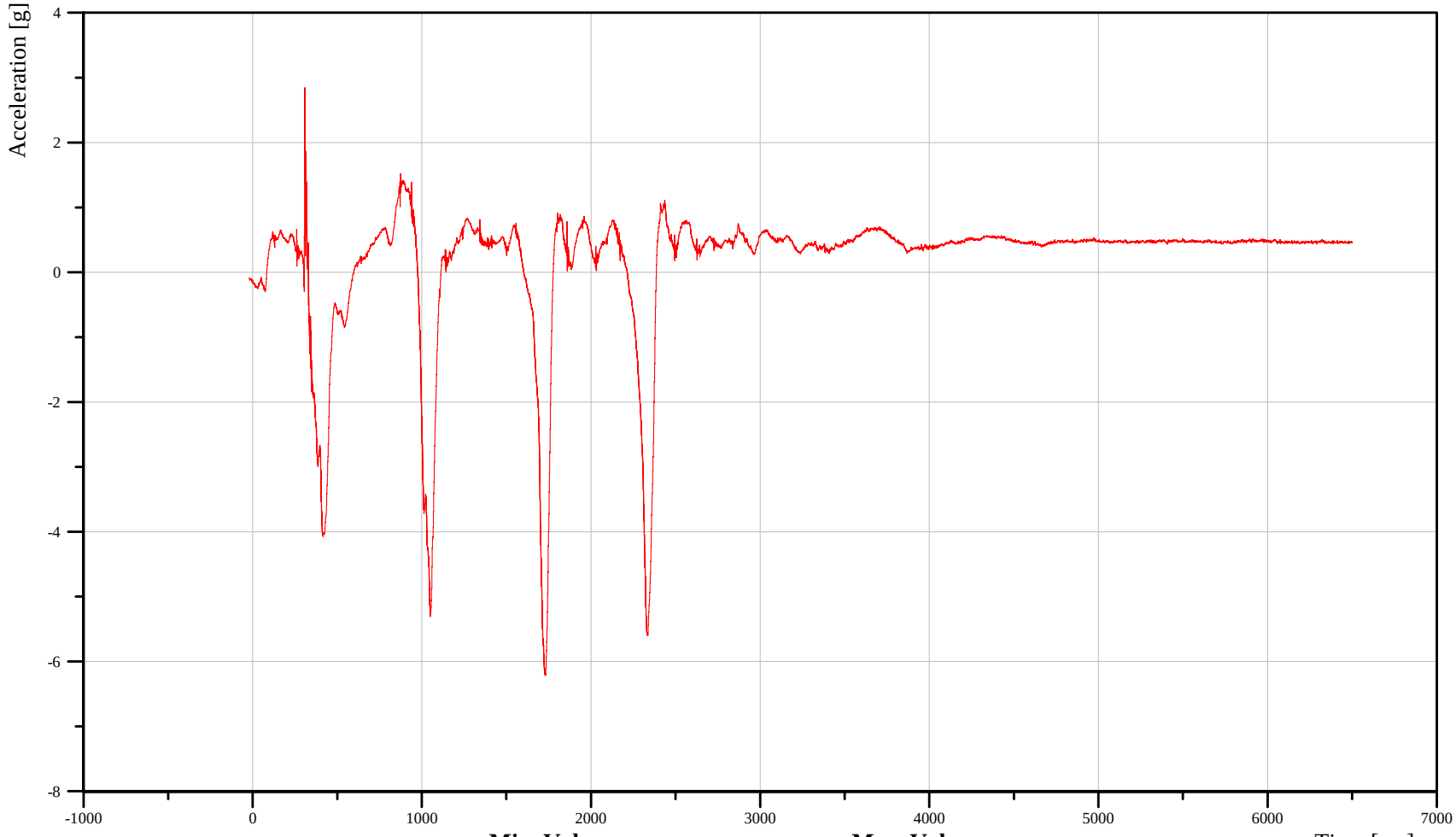
Right Front Passenger Chest Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-6.21 g at 1,728.08 ms

Max. Value
2.85 g at 308.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

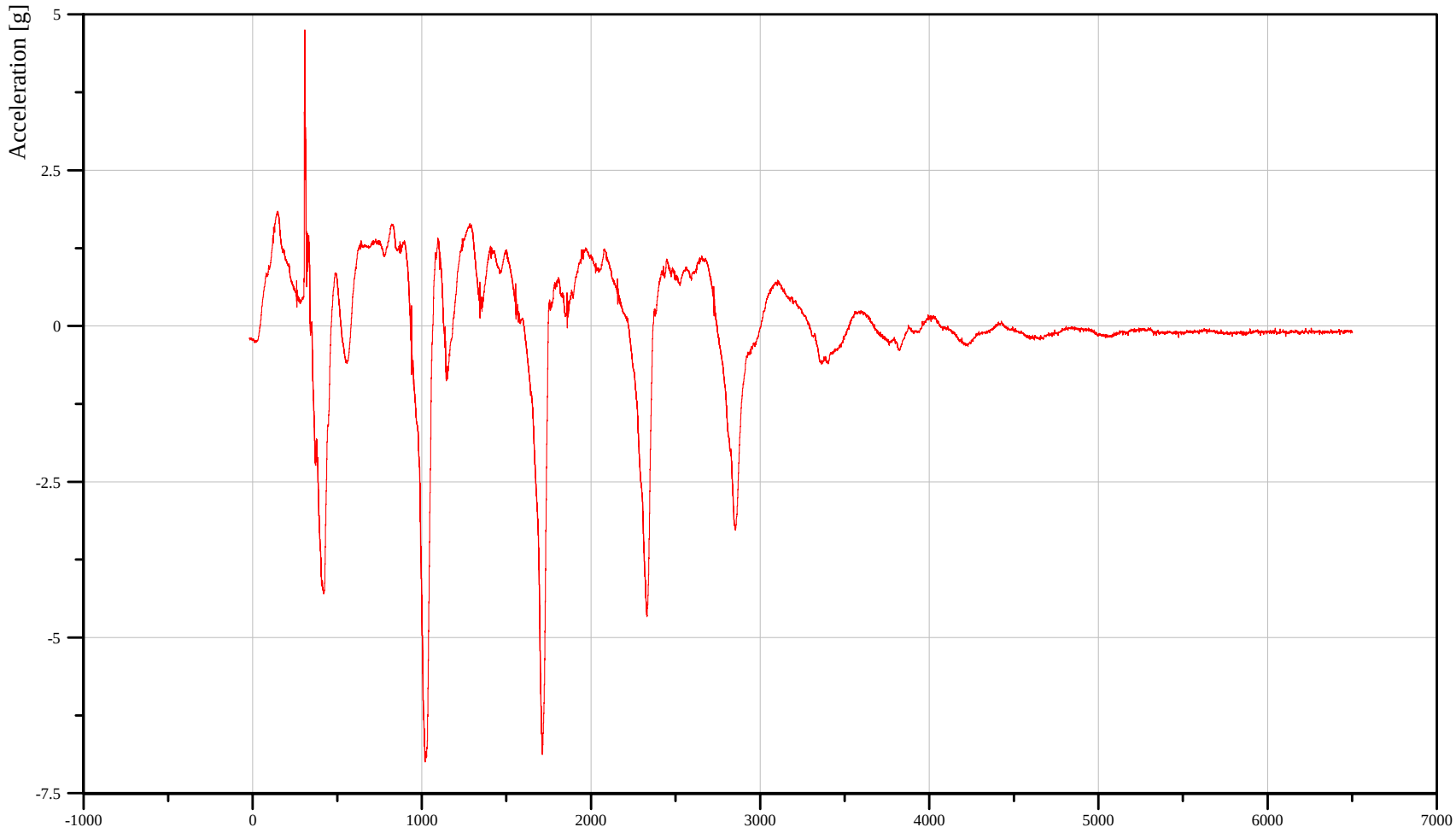
Right Front Passenger Chest Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-7.00 g at 1,018.56 ms

Max. Value
4.75 g at 307.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

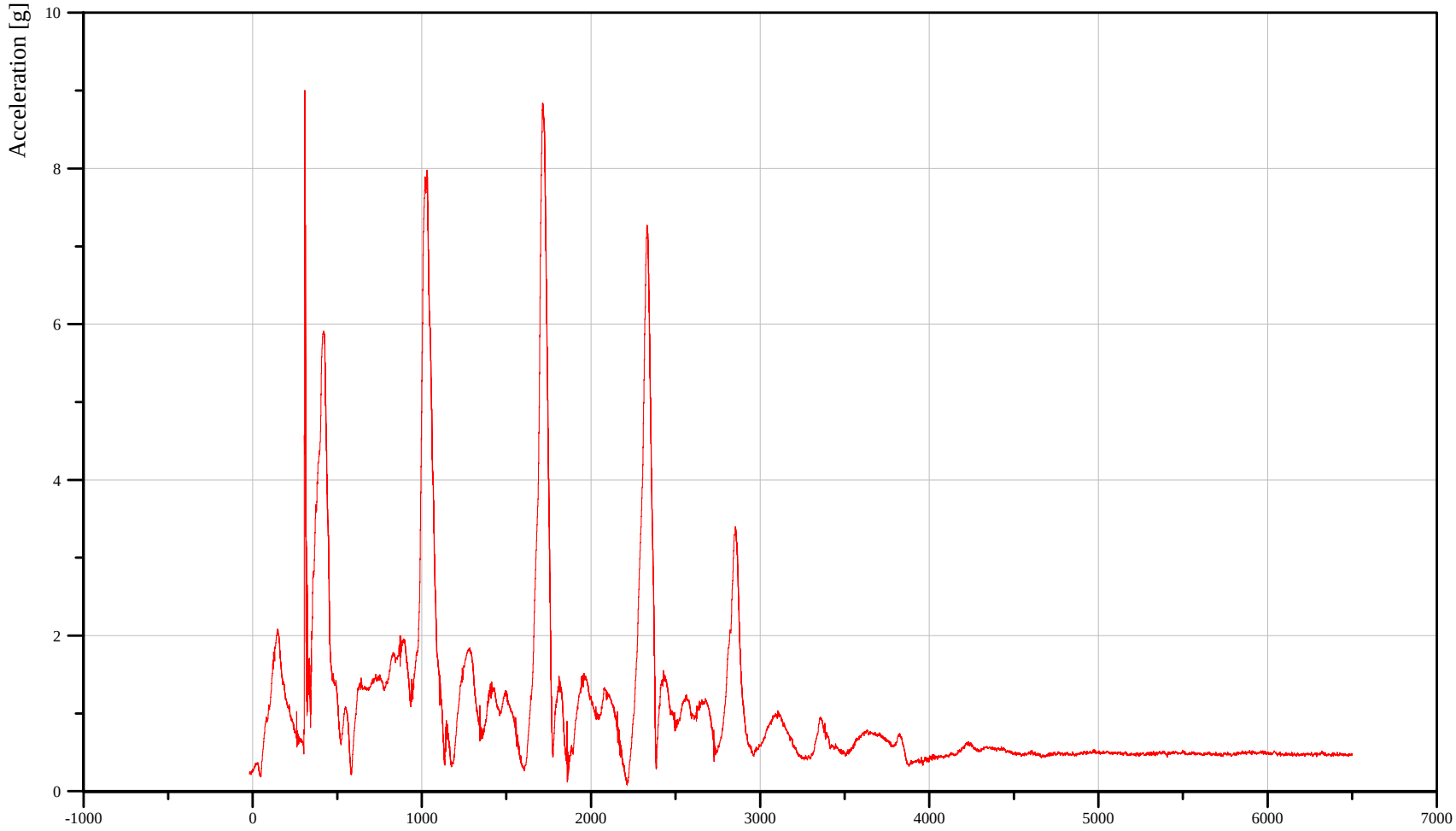
Right Front Passenger Chest Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
0.08 g at 2,213.12 ms

Max. Value
9.01 g at 307.44 ms

FMVSS 208 Rollover 2007 Ford Expedition

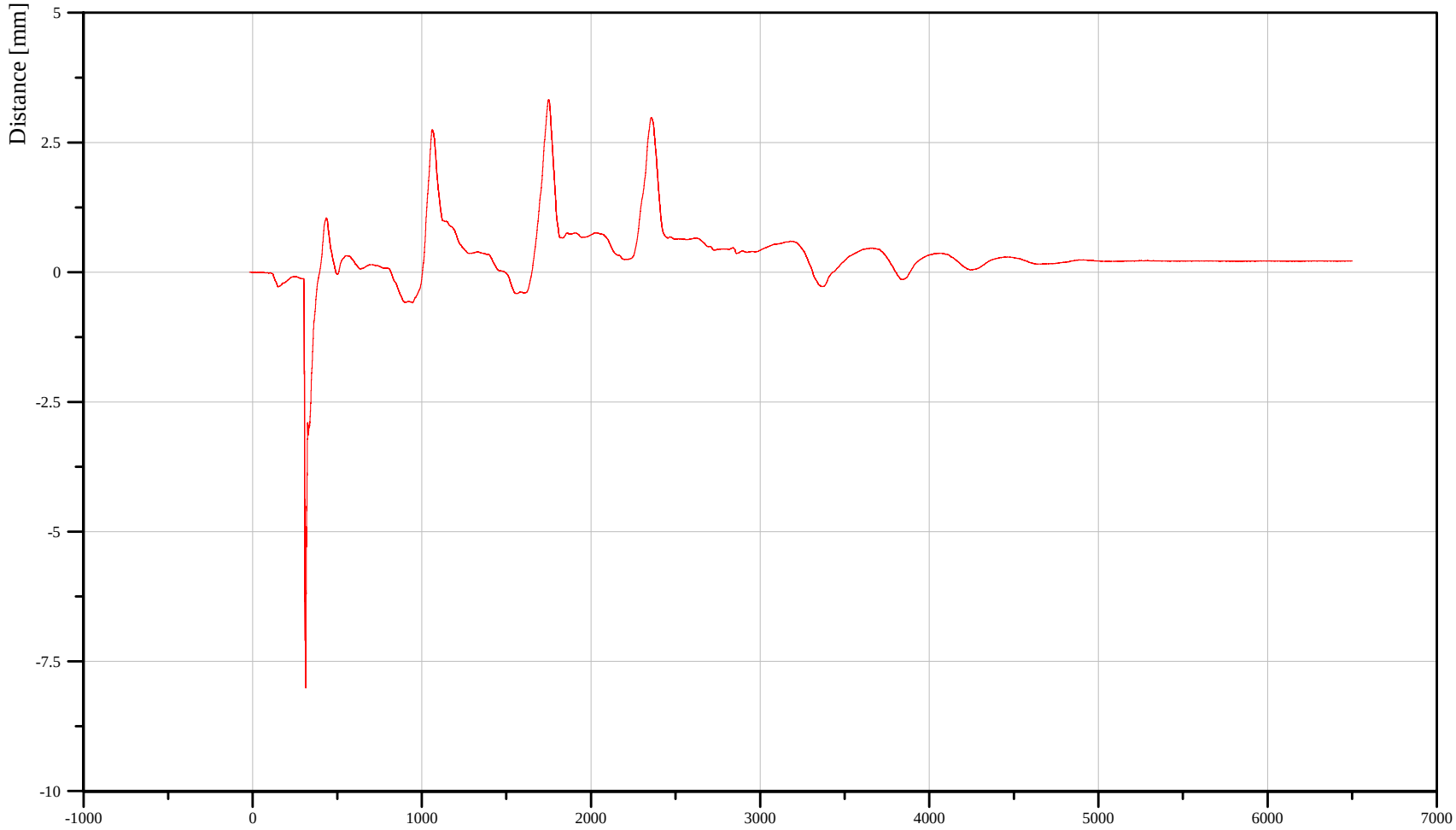
Right Front Passenger Chest X-Axis Displacement

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-8.01 mm at 313.04 ms

Max. Value
3.33 mm at 1,748.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

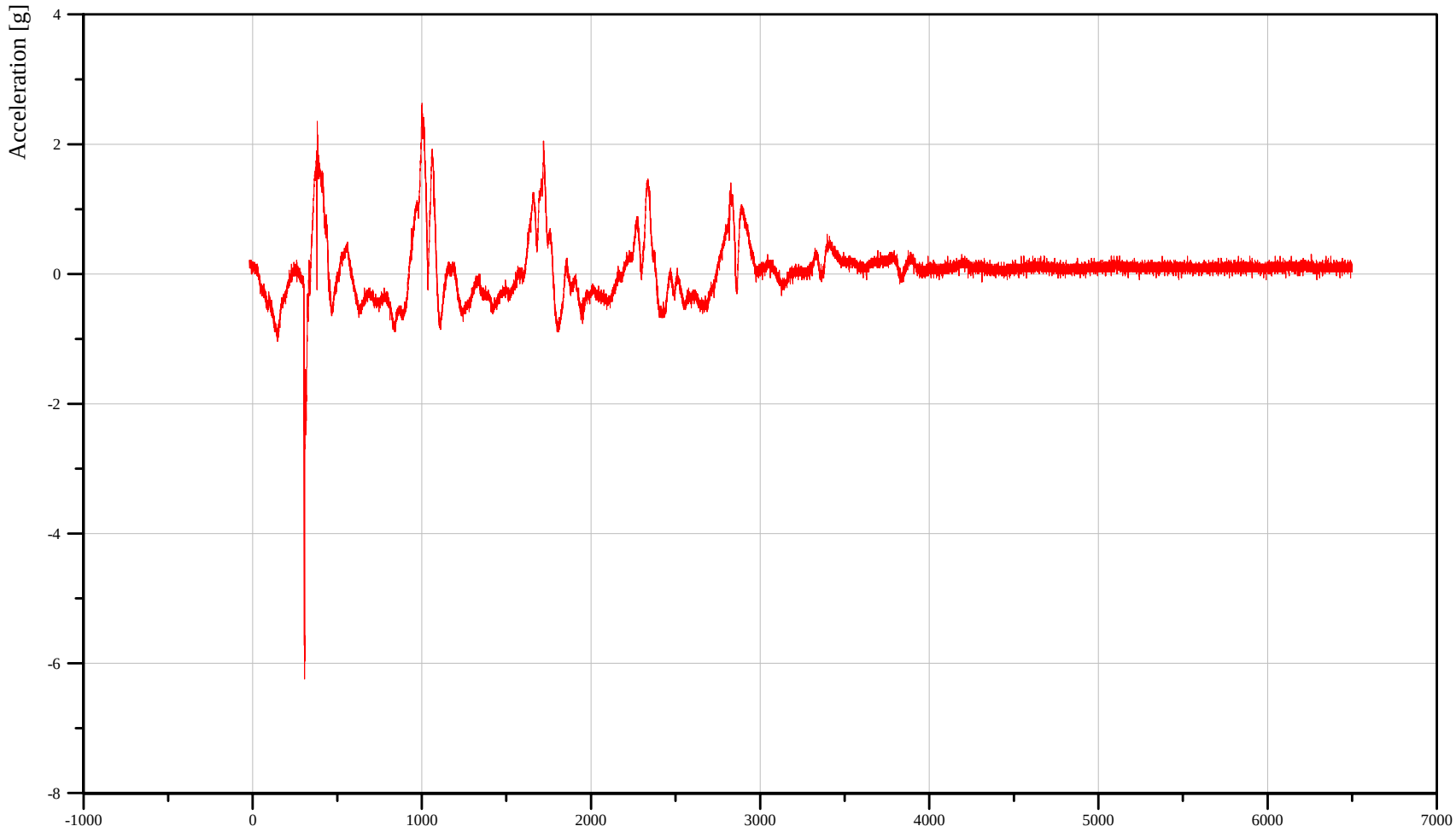
Right Front Passenger Pelvis X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13PELVCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-6.24 g at 305.36 ms

Max. Value
2.63 g at 1,000.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

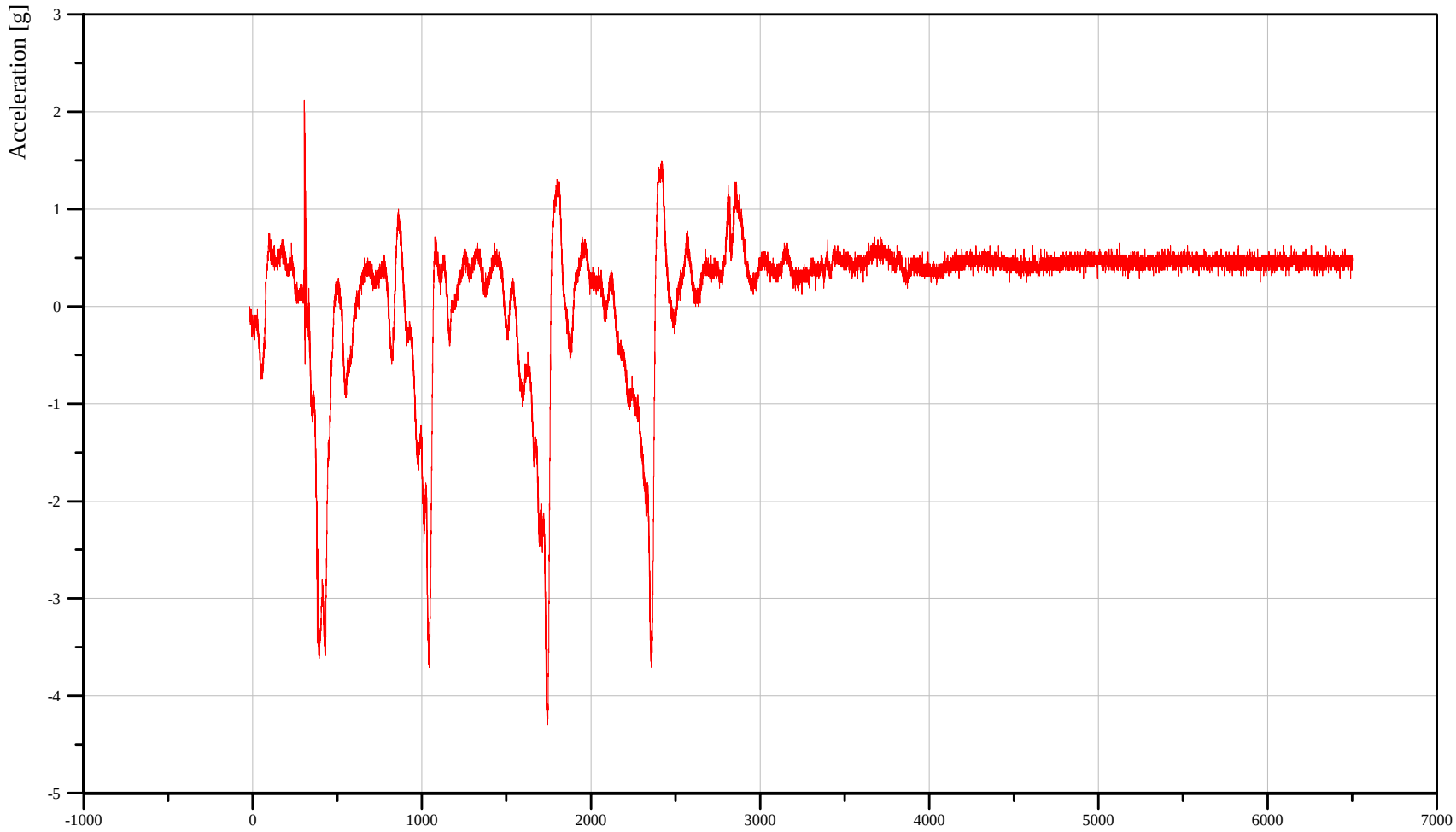
Right Front Passenger Pelvis Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13PELVCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-4.30 g at 1,742.56 ms

Max. Value
2.12 g at 304.64 ms

FMVSS 208 Rollover 2007 Ford Expedition

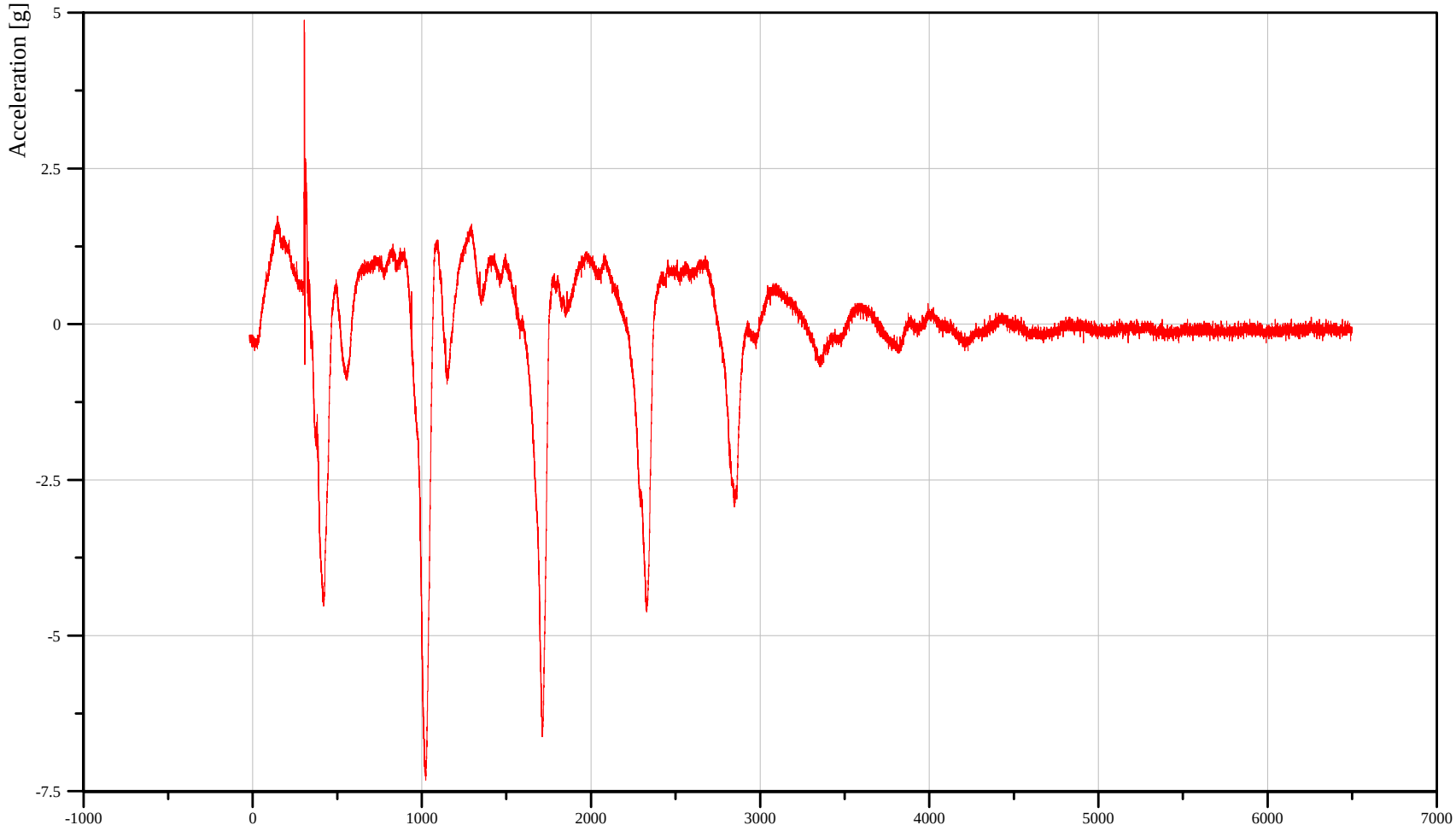
Right Front Passenger Pelvis Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13PELVCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-7.32 g at 1,022.96 ms

Max. Value
4.88 g at 304.64 ms

FMVSS 208 Rollover 2007 Ford Expedition

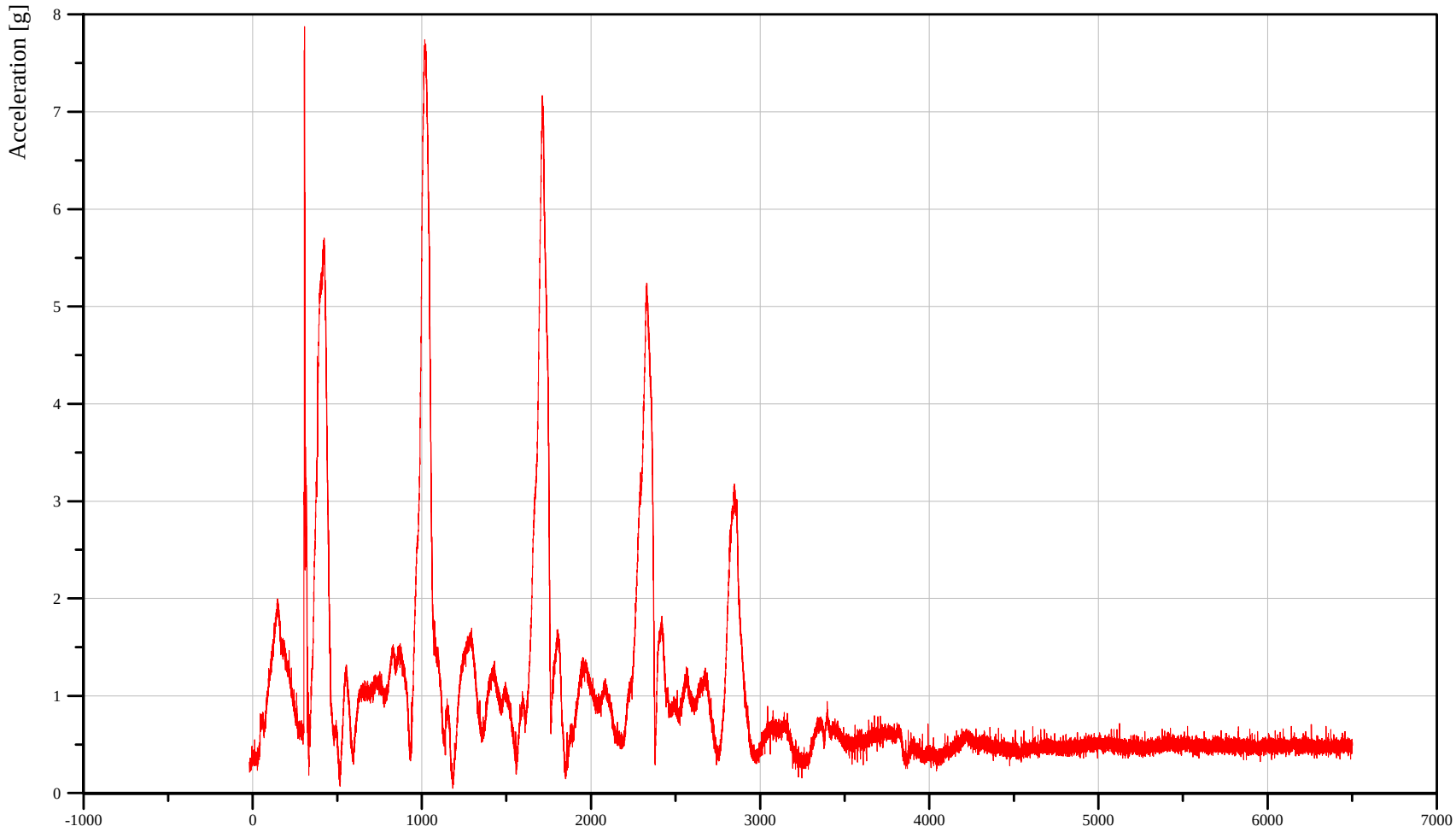
Right Front Passenger Pelvis Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13PELVCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.05 g at 1,182.96 ms

Max. Value
7.88 g at 305.28 ms

FMVSS 208 Rollover 2007 Ford Expedition

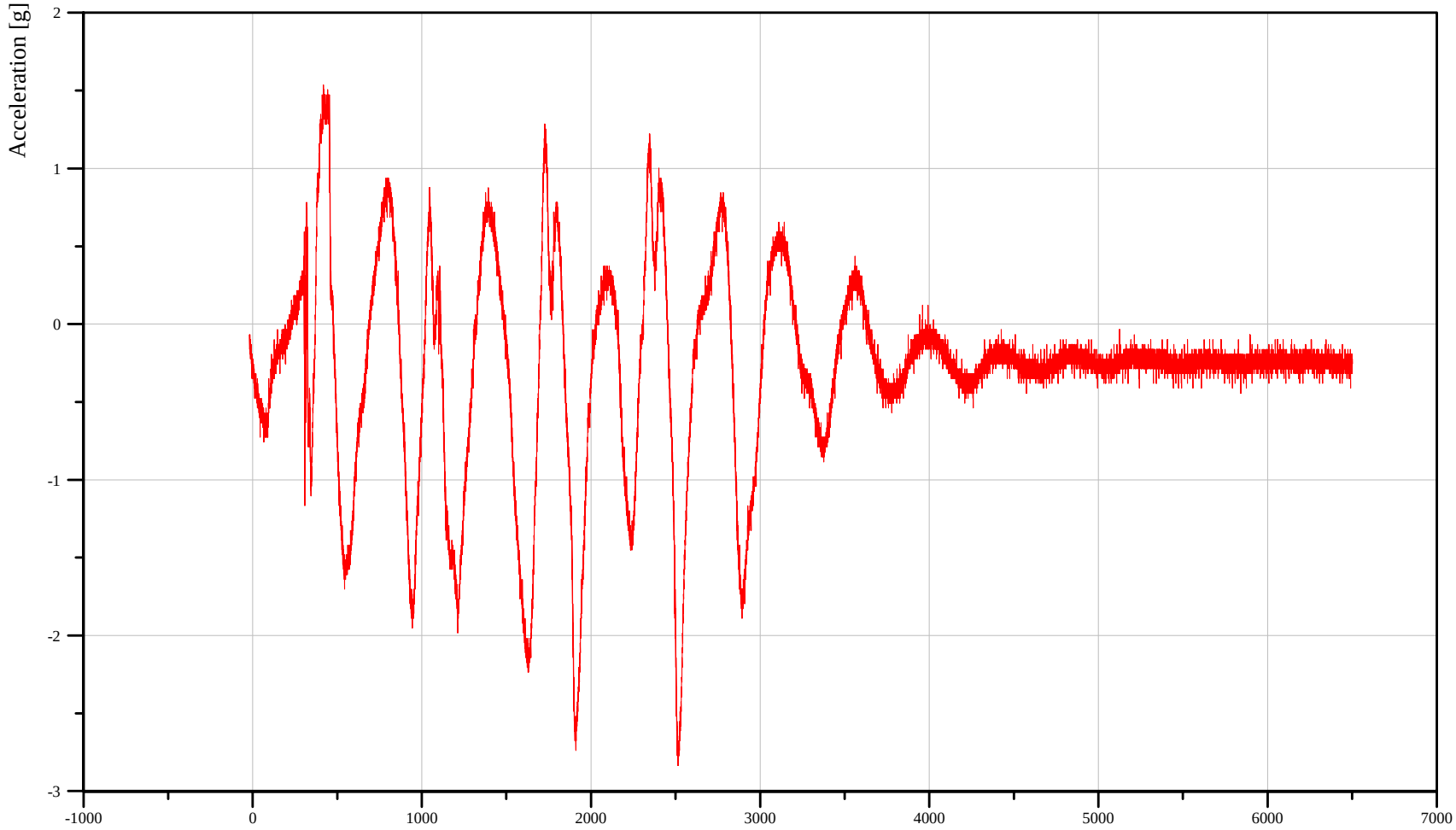
Left Rear Passenger Head X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-2.83 g at 2,512.40 ms

Max. Value
1.54 g at 417.04 ms

FMVSS 208 Rollover 2007 Ford Expedition

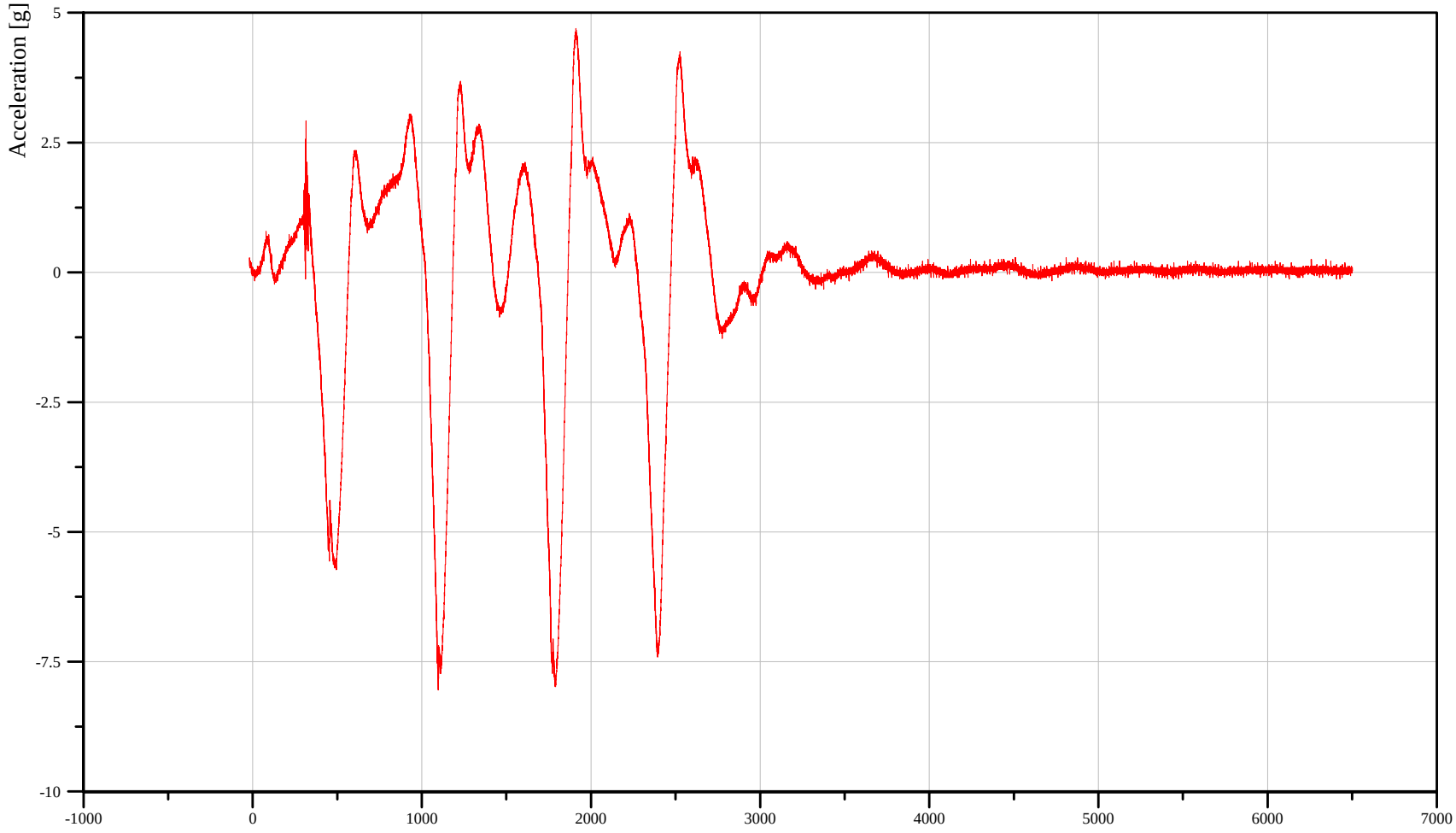
Left Rear Passenger Head Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-8.04 g at 1,096.80 ms

Max. Value
4.70 g at 1,909.36 ms

FMVSS 208 Rollover 2007 Ford Expedition

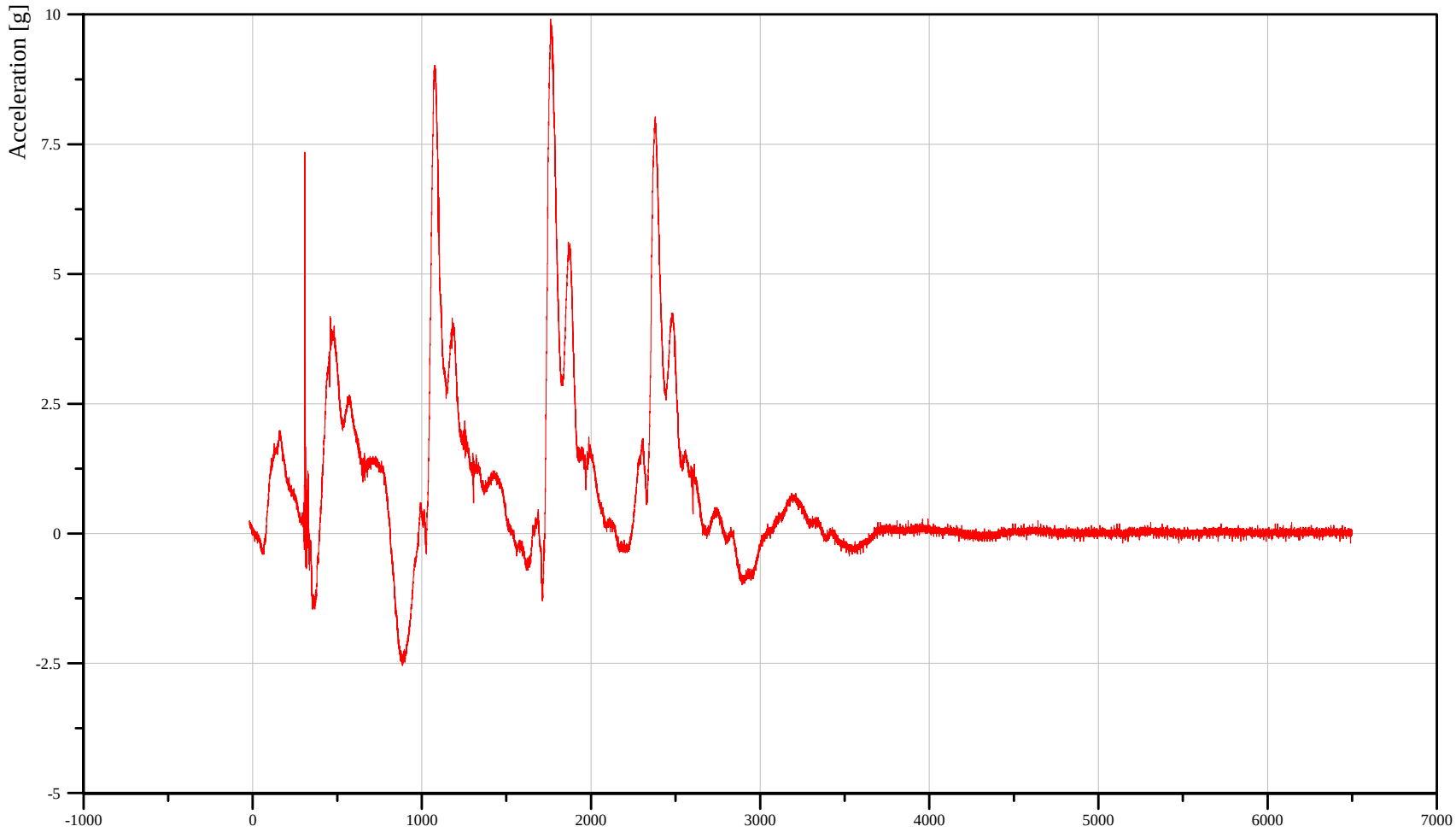
Left Rear Passenger Head Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-2.54 g at 884.80 ms

Max. Value
9.91 g at 1,761.36 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

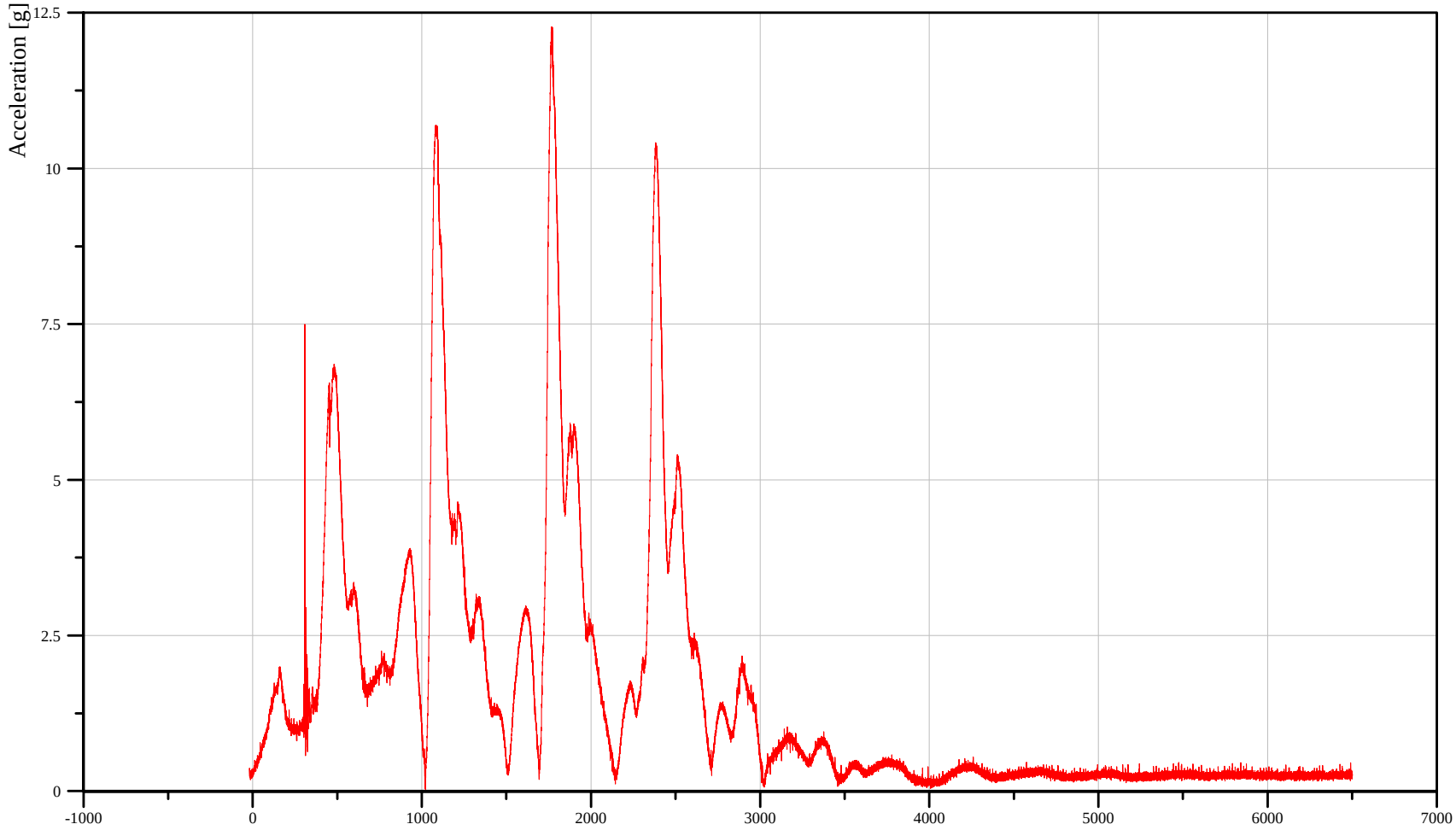
Left Rear Passenger Head Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.03 g at 1,020.08 ms

Max. Value
12.27 g at 1,766.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

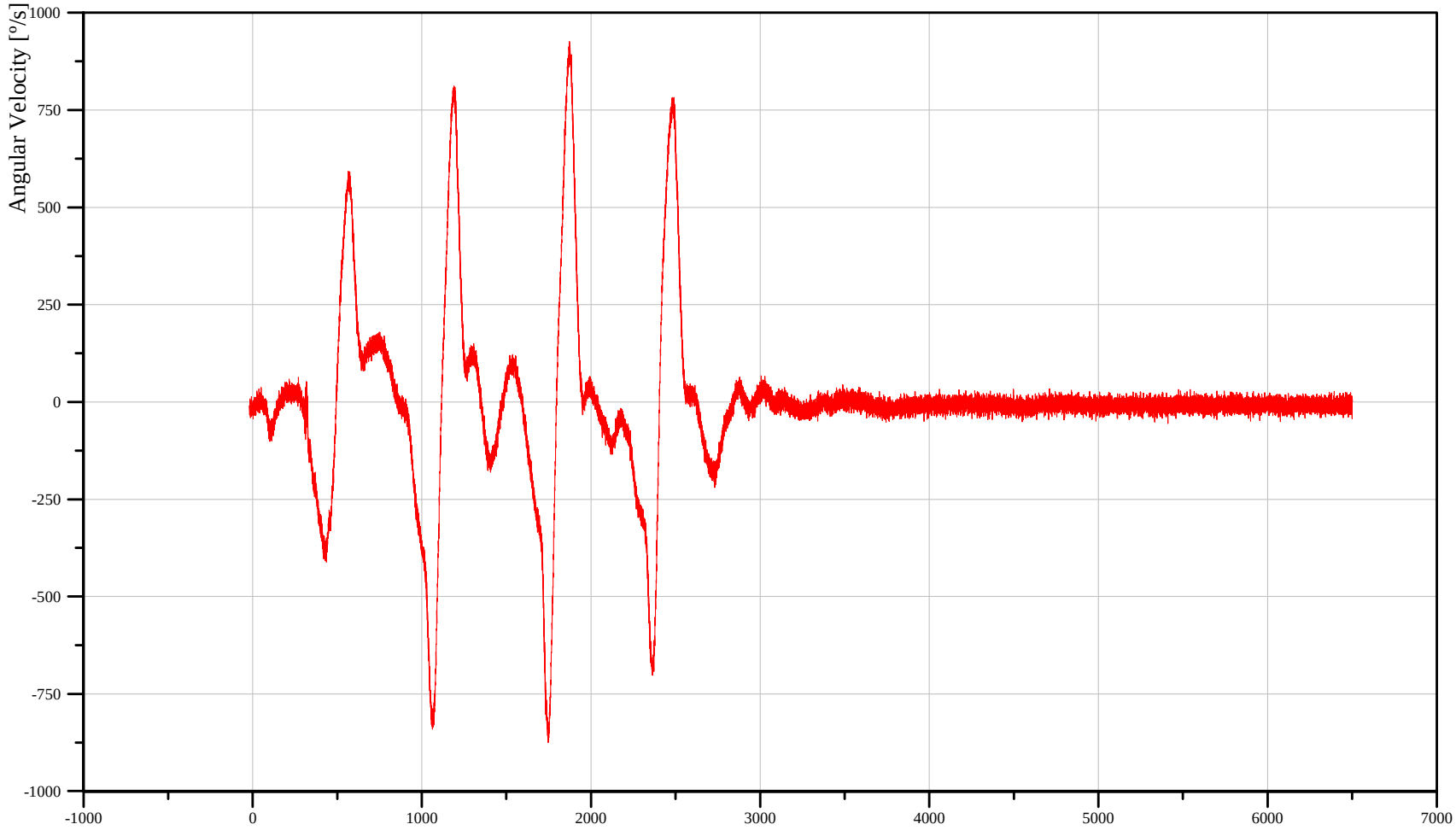
Left Rear Passenger Head (DTS ARS) Rate Gyro X

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3AVXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-874.86 °/s at 1,745.68 ms

Max. Value
926.11 °/s at 1,872.32 ms

FMVSS 208 Rollover 2007 Ford Expedition

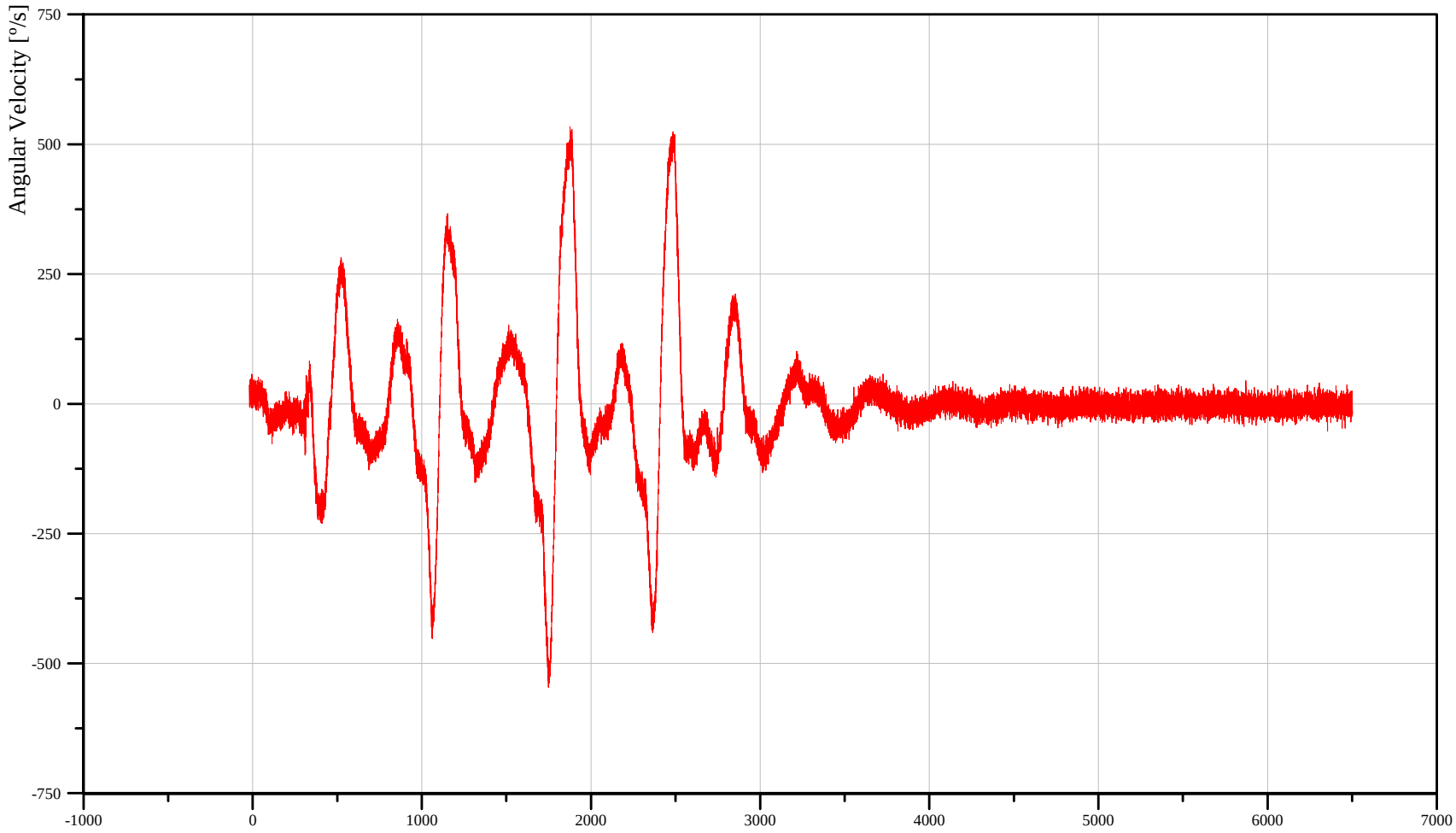
Left Rear Passenger Head (DTS ARS) Rate Gyro Y

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3AVYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-545.91 °/s at 1,748.24 ms

Max. Value
533.90 °/s at 1,876.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

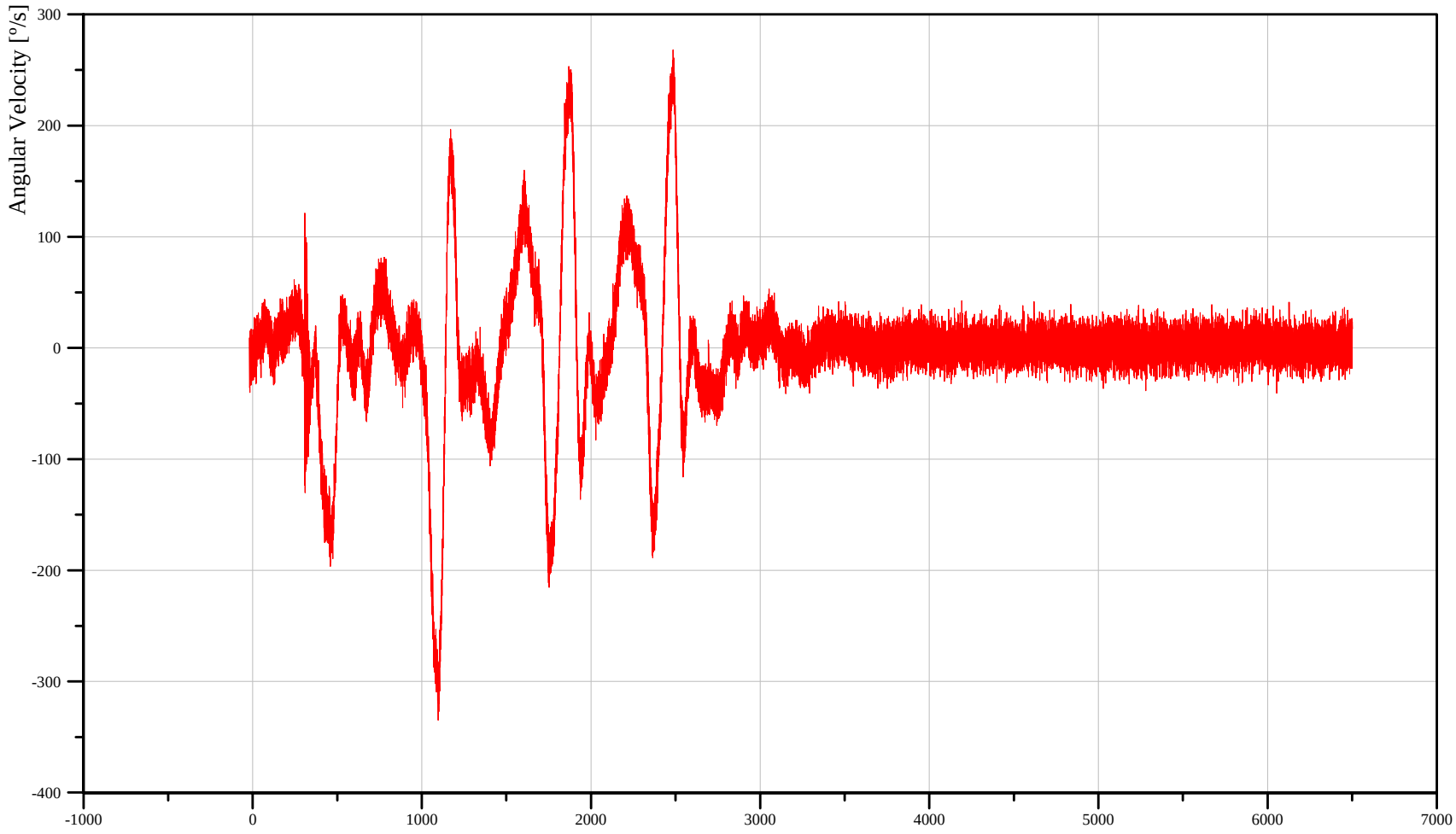
Left Rear Passenger Head (DTS ARS) Rate Gyro Z

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14HEADCG00H3AVZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-334.85 °/s at 1,096.16 ms

Max. Value
268.00 °/s at 2,484.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

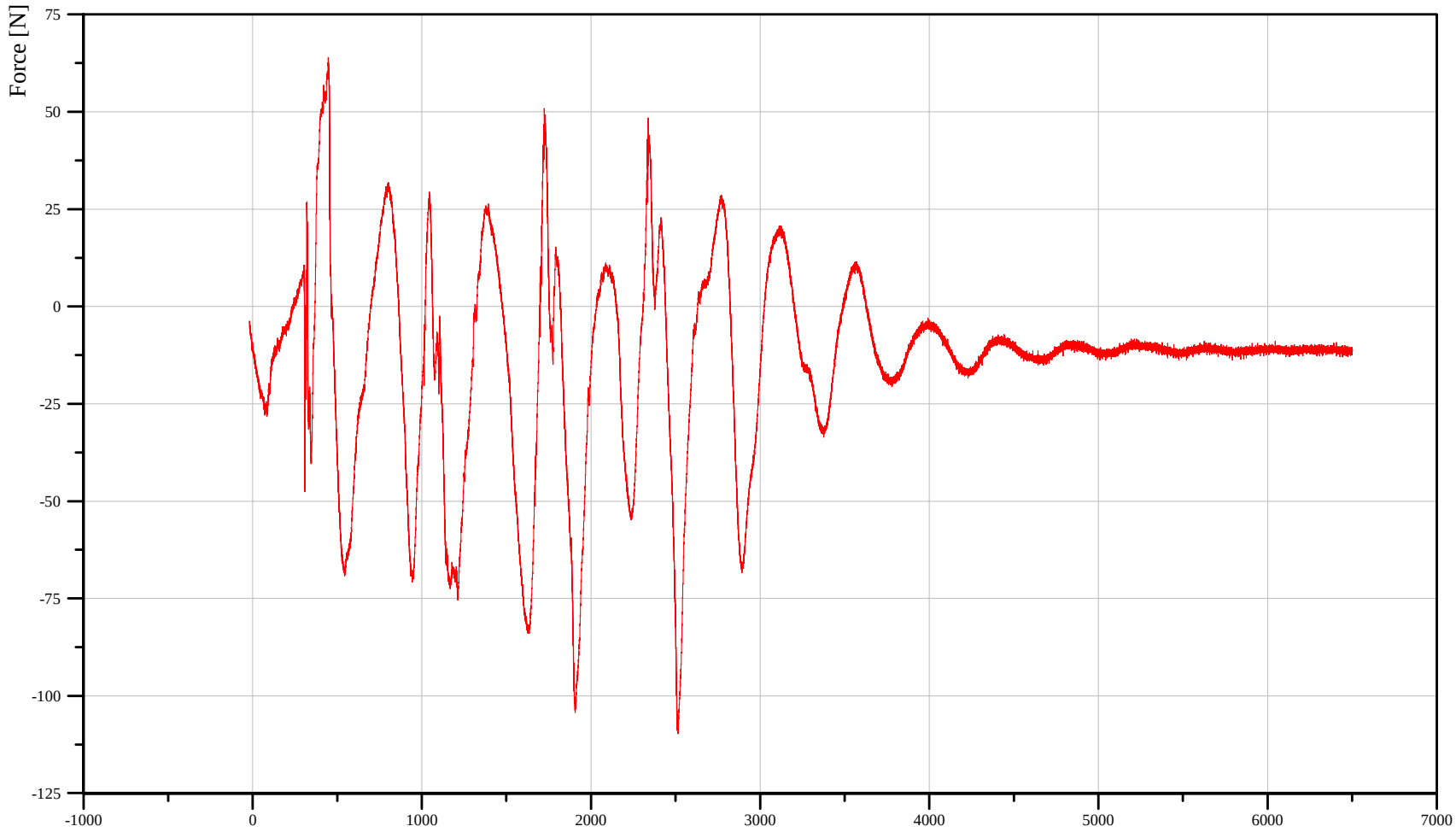
Left Rear Passenger Upper Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-109.73 N at 2,512.32 ms

Max. Value
63.92 N at 446.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

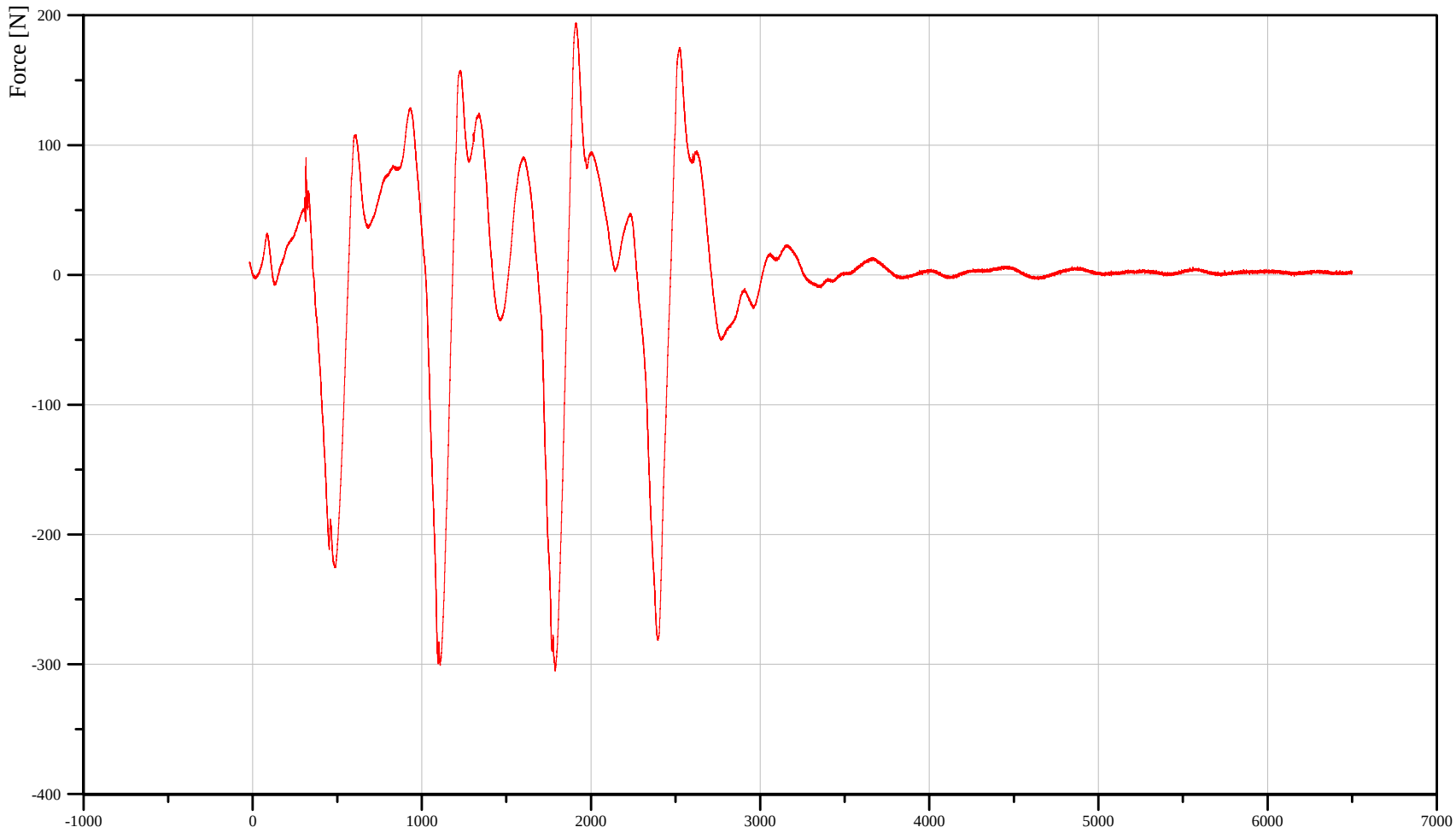
Left Rear Passenger Upper Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-305.33 N at 1,787.84 ms

Max. Value
194.56 N at 1,909.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

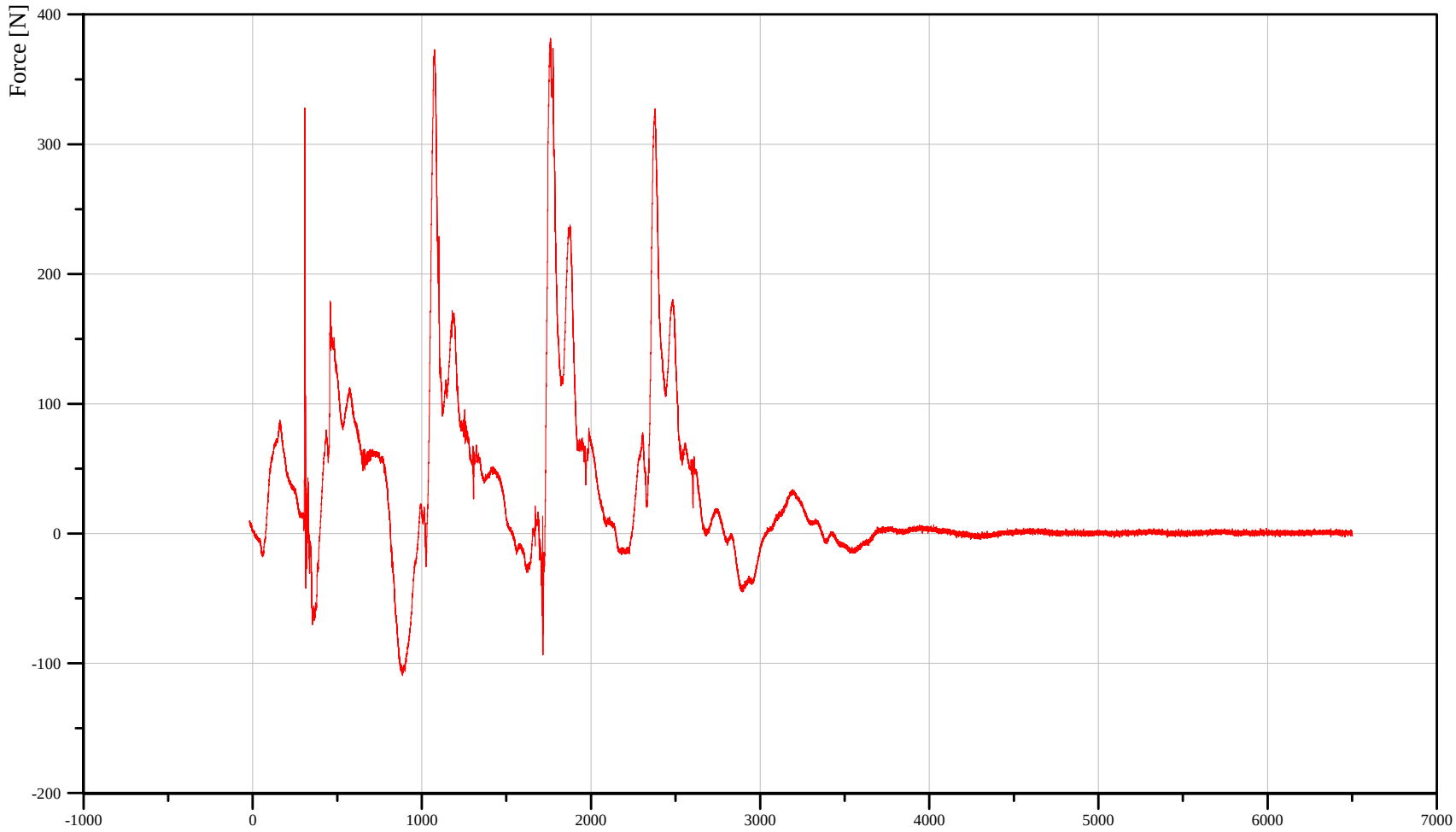
Left Rear Passenger Upper Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-109.50 N at 885.36 ms

Max. Value
381.54 N at 1,759.92 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

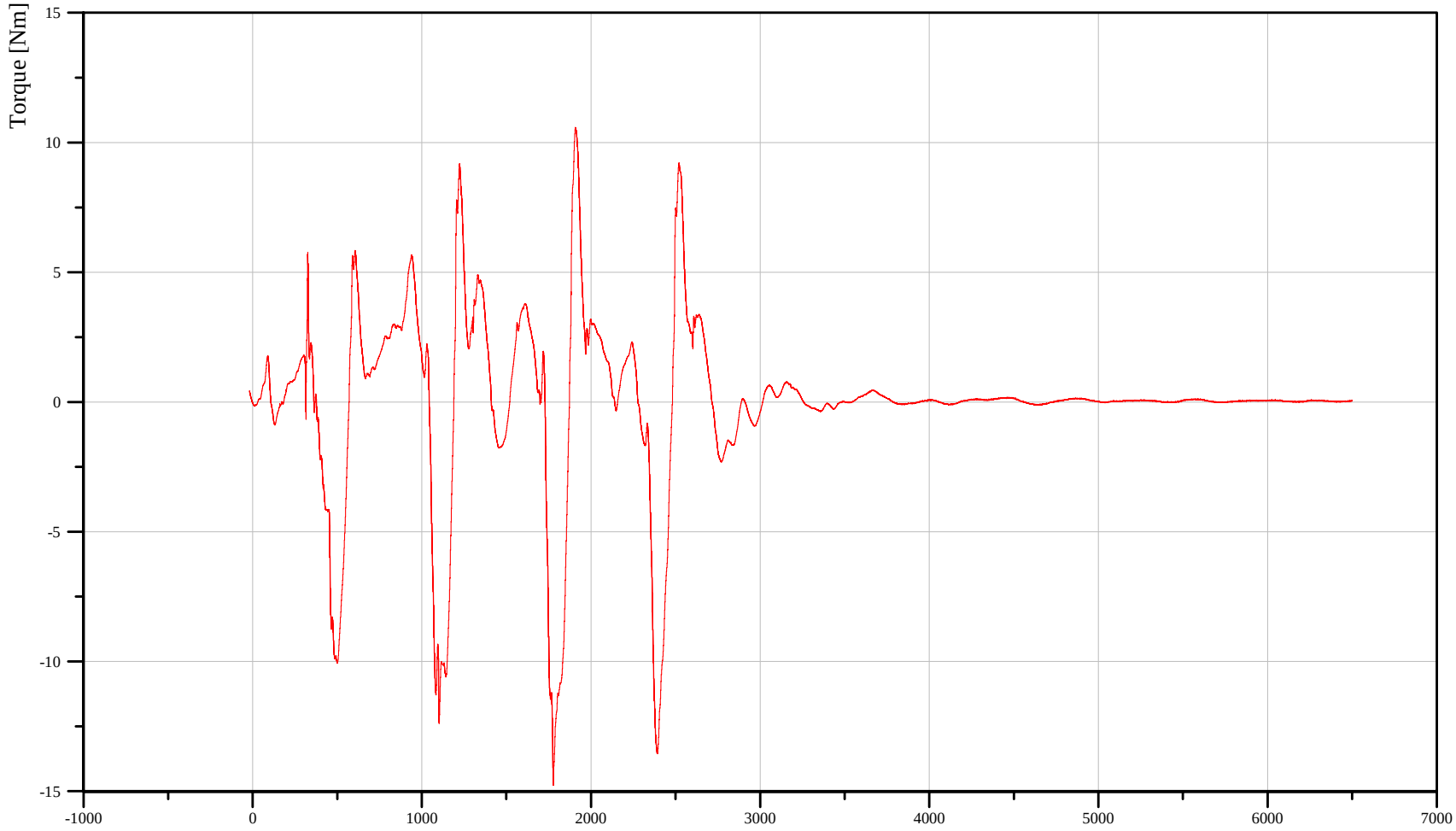
Left Rear Passenger Upper Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-14.77 Nm at 1,776.32 ms

Max. Value
10.59 Nm at 1,907.12 ms

FMVSS 208 Rollover 2007 Ford Expedition

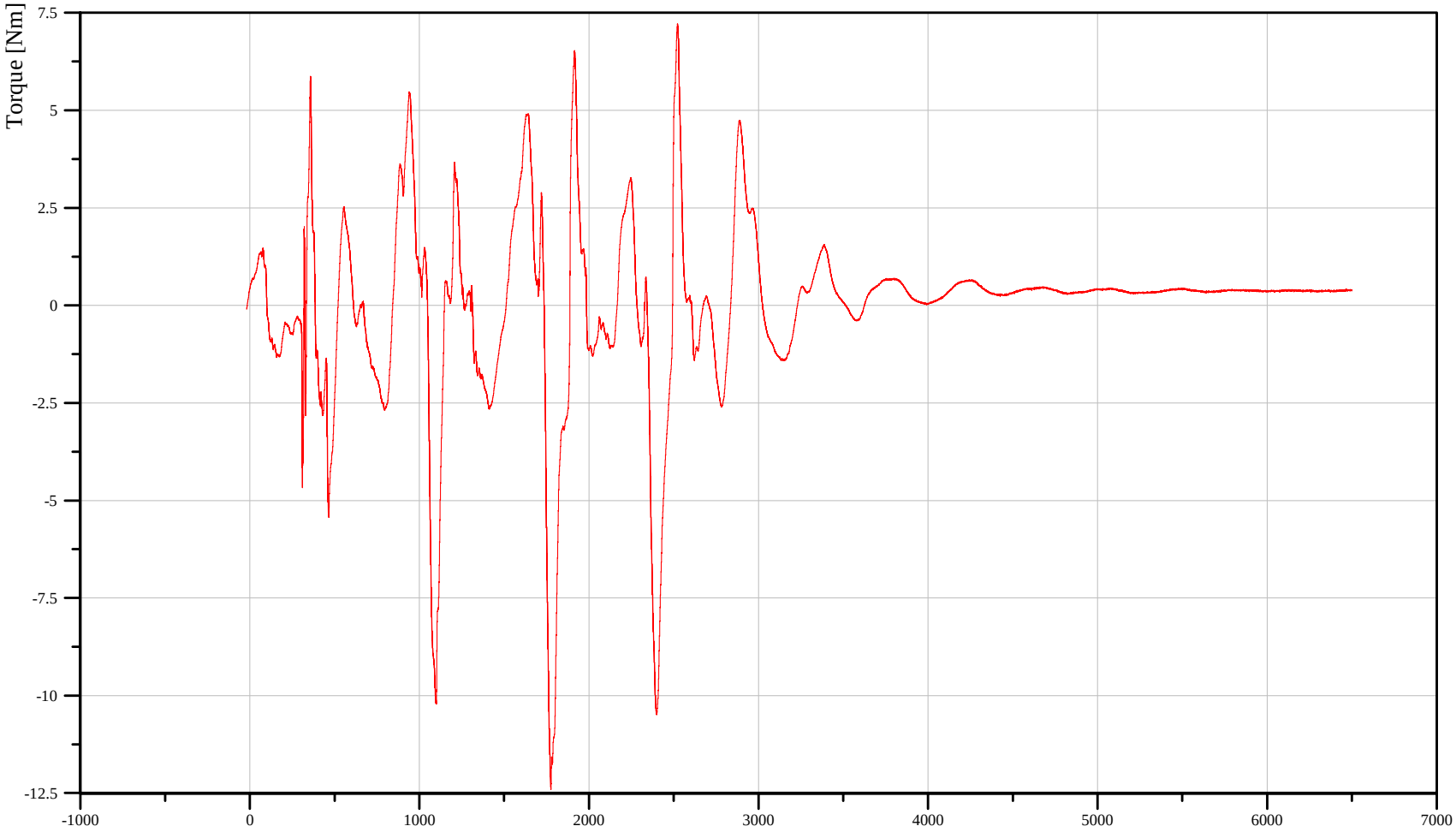
Left Rear Passenger Upper Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-12.41 Nm at 1,774.88 ms

Max. Value
7.21 Nm at 2,521.52 ms

FMVSS 208 Rollover 2007 Ford Expedition

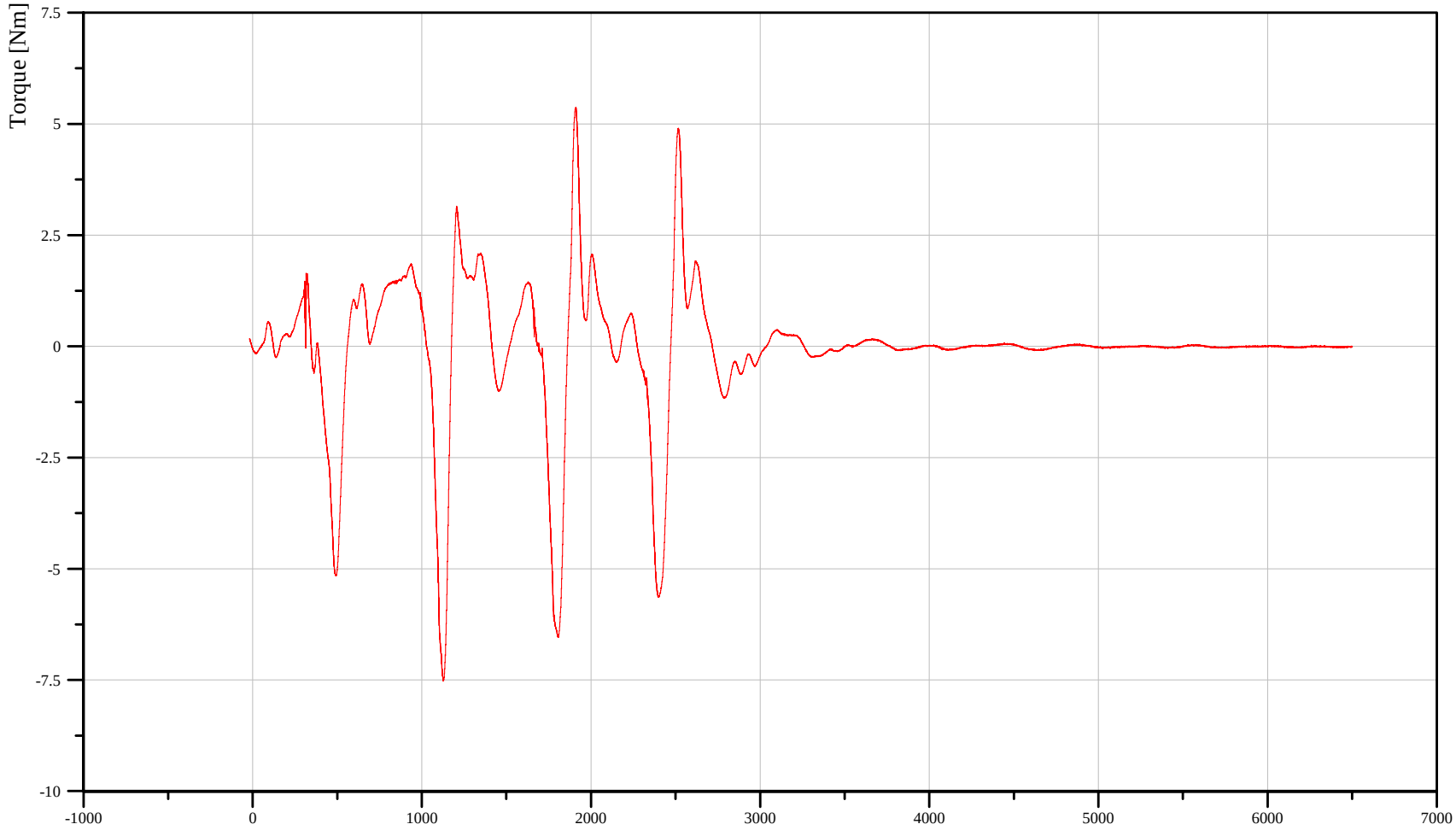
Left Rear Passenger Upper Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKUP00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-7.52 Nm at 1,127.76 ms

Max. Value
5.37 Nm at 1,909.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

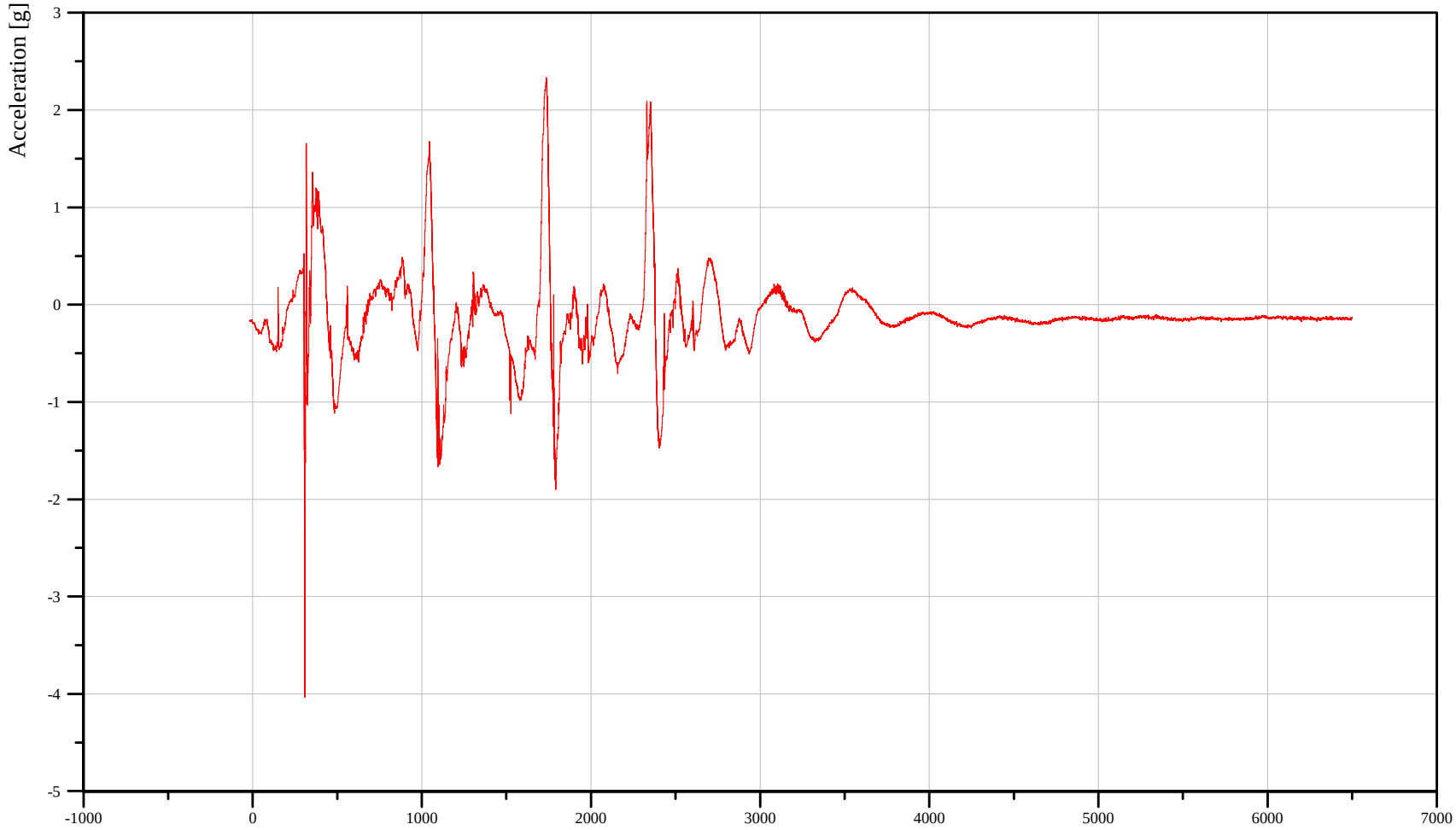
Left Rear Passenger Chest X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-4.03 g at 307.12 ms

Max. Value
2.34 g at 1,735.52 ms

FMVSS 208 Rollover 2007 Ford Expedition

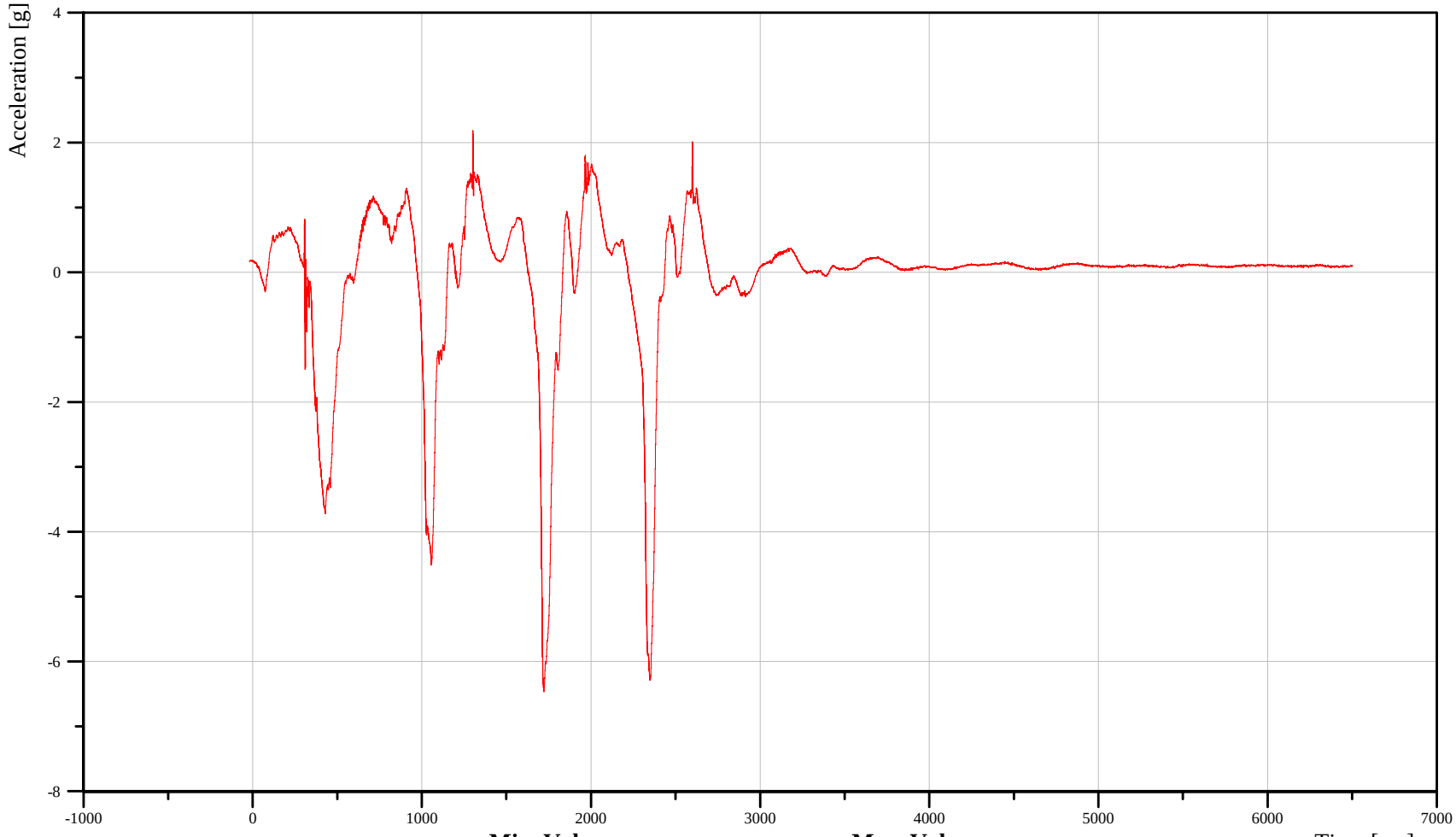
Left Rear Passenger Chest Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-6.47 g at 1,721.28 ms

Max. Value
2.18 g at 1,301.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

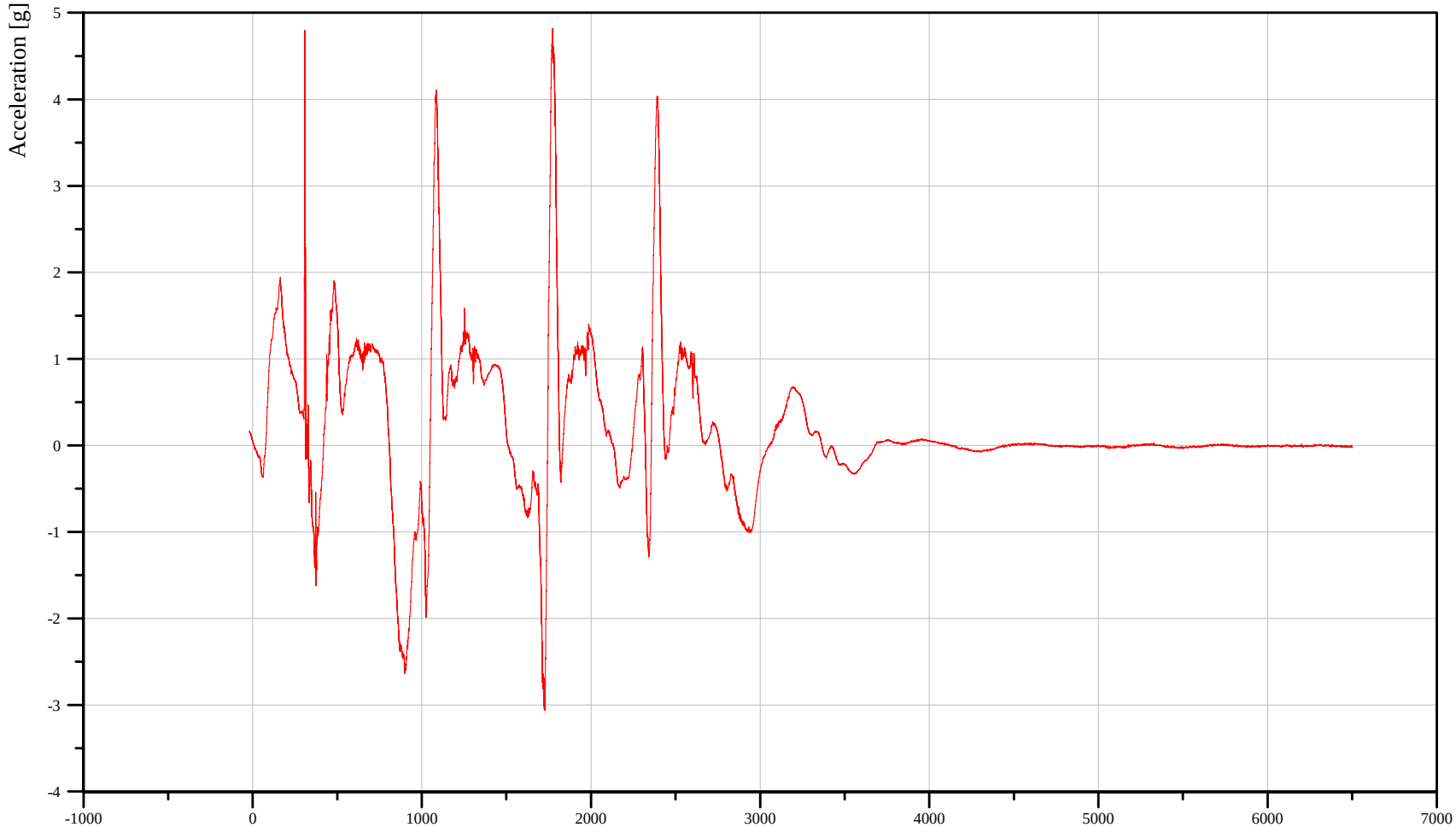
Left Rear Passenger Chest Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
-3.06 g at 1,726.32 ms

Max. Value
4.82 g at 1,772.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

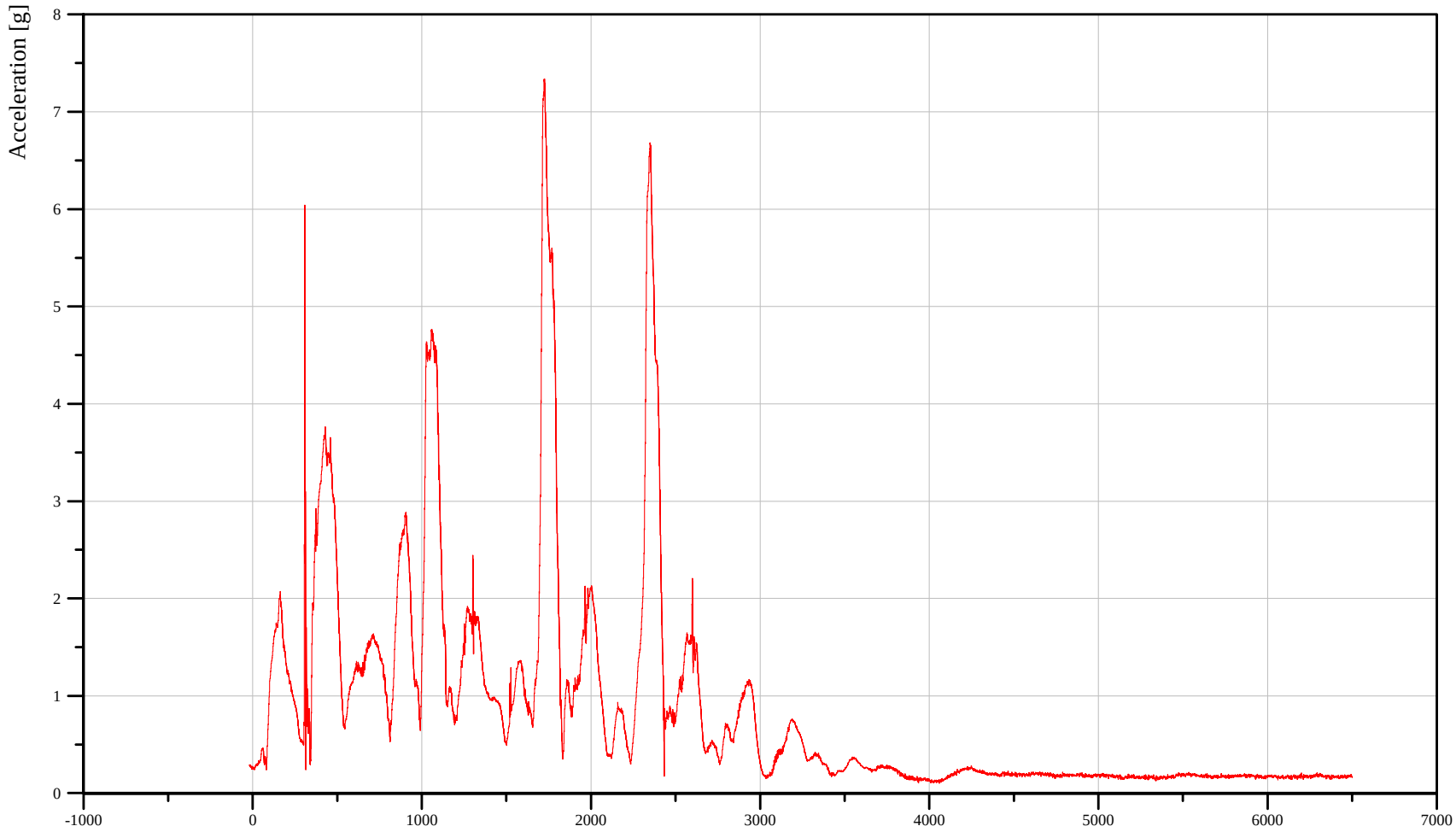
Left Rear Passenger Chest Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_180

Min. Value
0.10 g at 4,058.56 ms

Max. Value
7.34 g at 1,724.00 ms

FMVSS 208 Rollover 2007 Ford Expedition

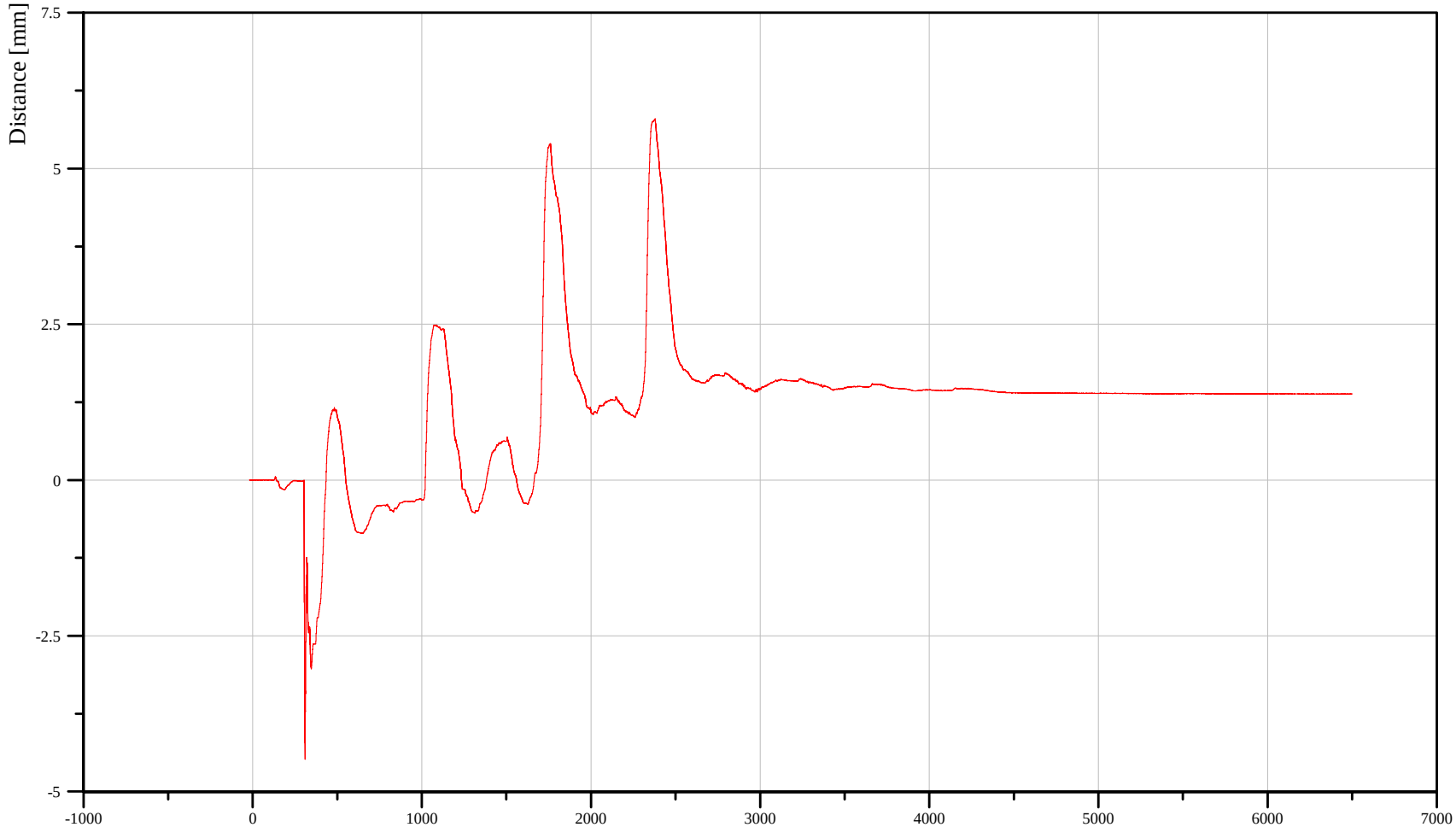
Left Rear Passenger Chest X-Axis Displacement

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CHST0000H3DSXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-4.49 mm at 309.36 ms

Max. Value
5.80 mm at 2,378.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

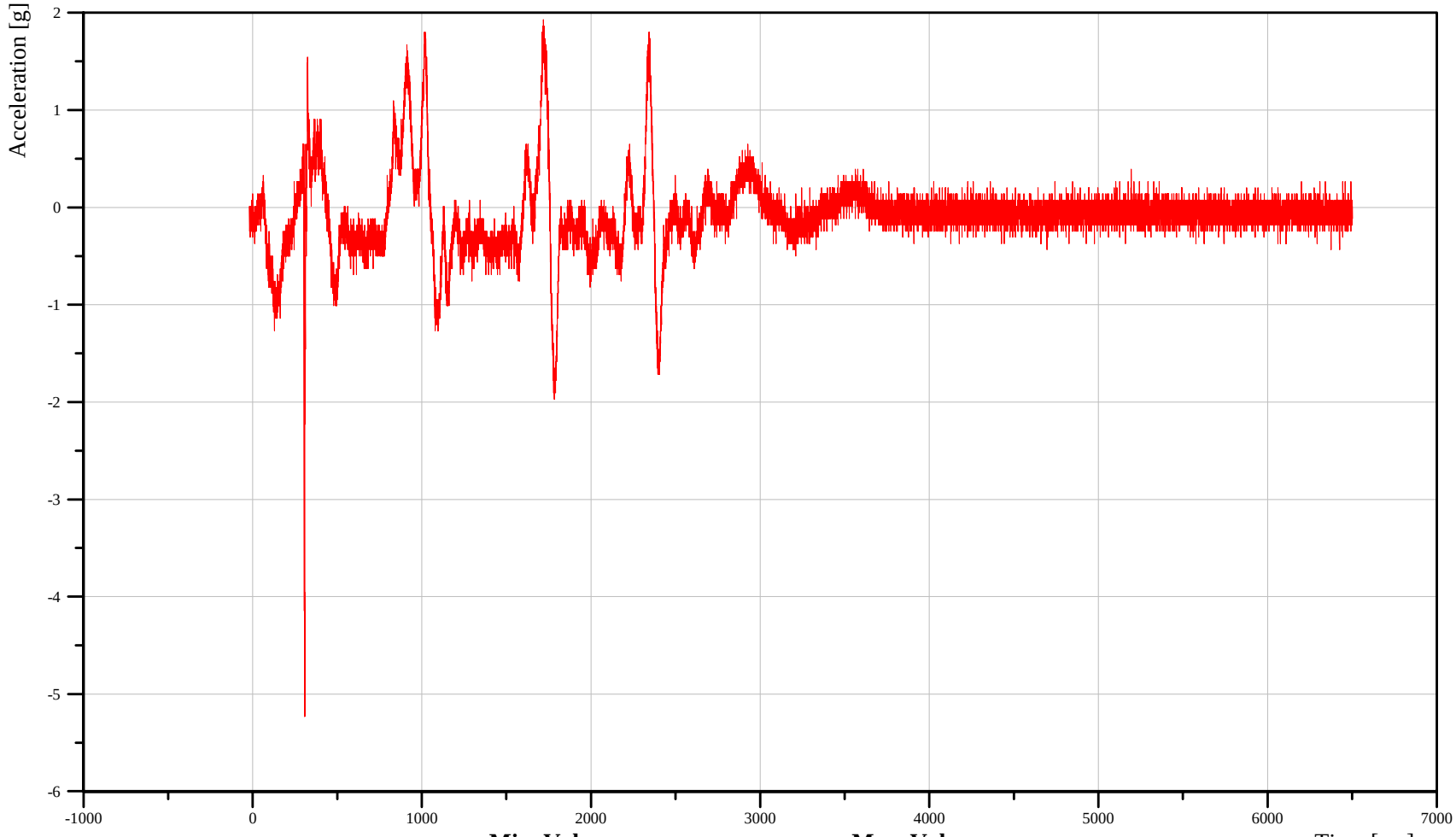
Left Rear Passenger Pelvis X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14PELVCG00H3ACXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-5.23 g at 306.96 ms

Max. Value
1.93 g at 1,718.08 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

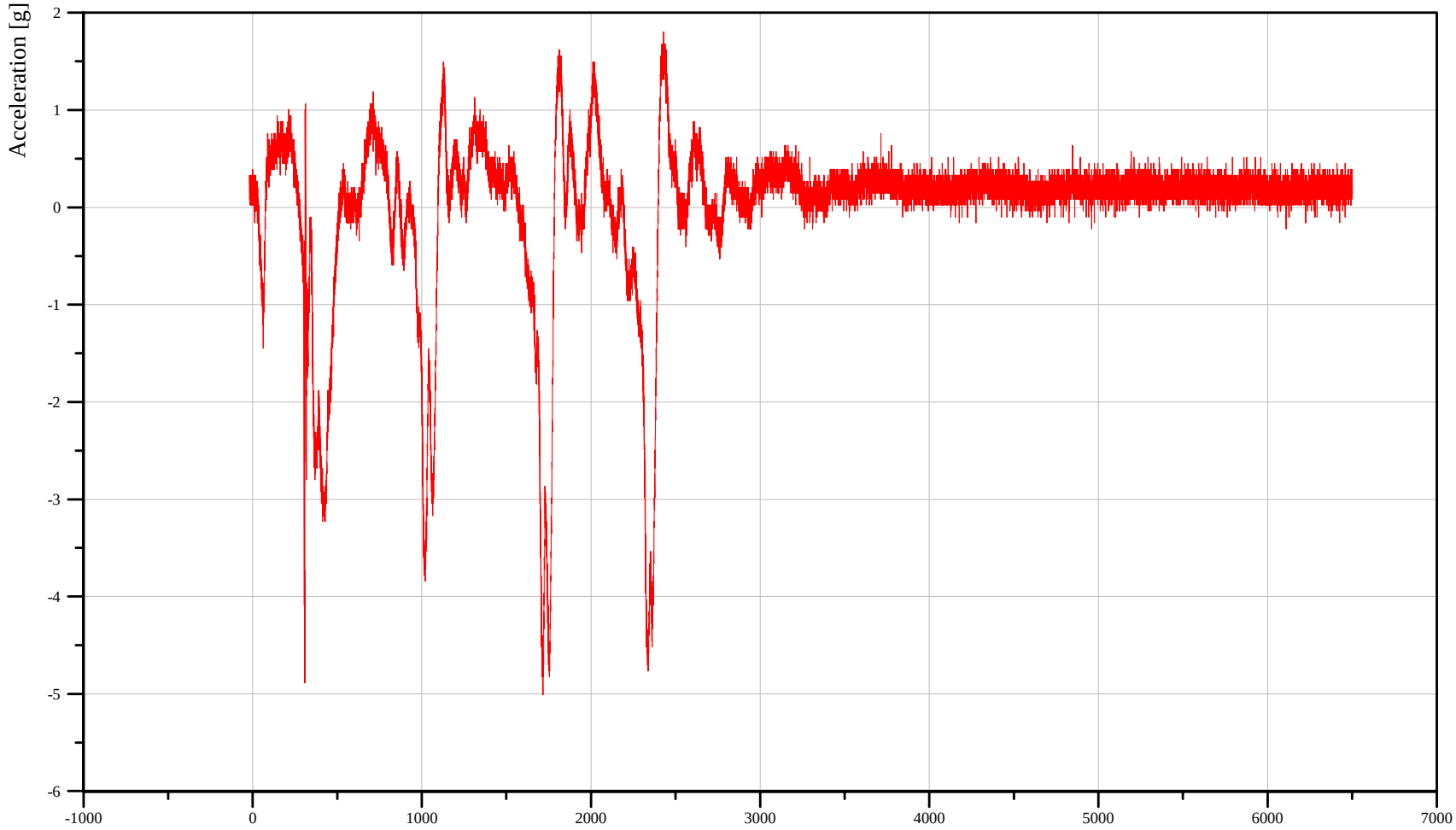
Left Rear Passenger Pelvis Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14PELVCG00H3ACYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-5.01 g at 1,714.80 ms

Max. Value
1.80 g at 2,429.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

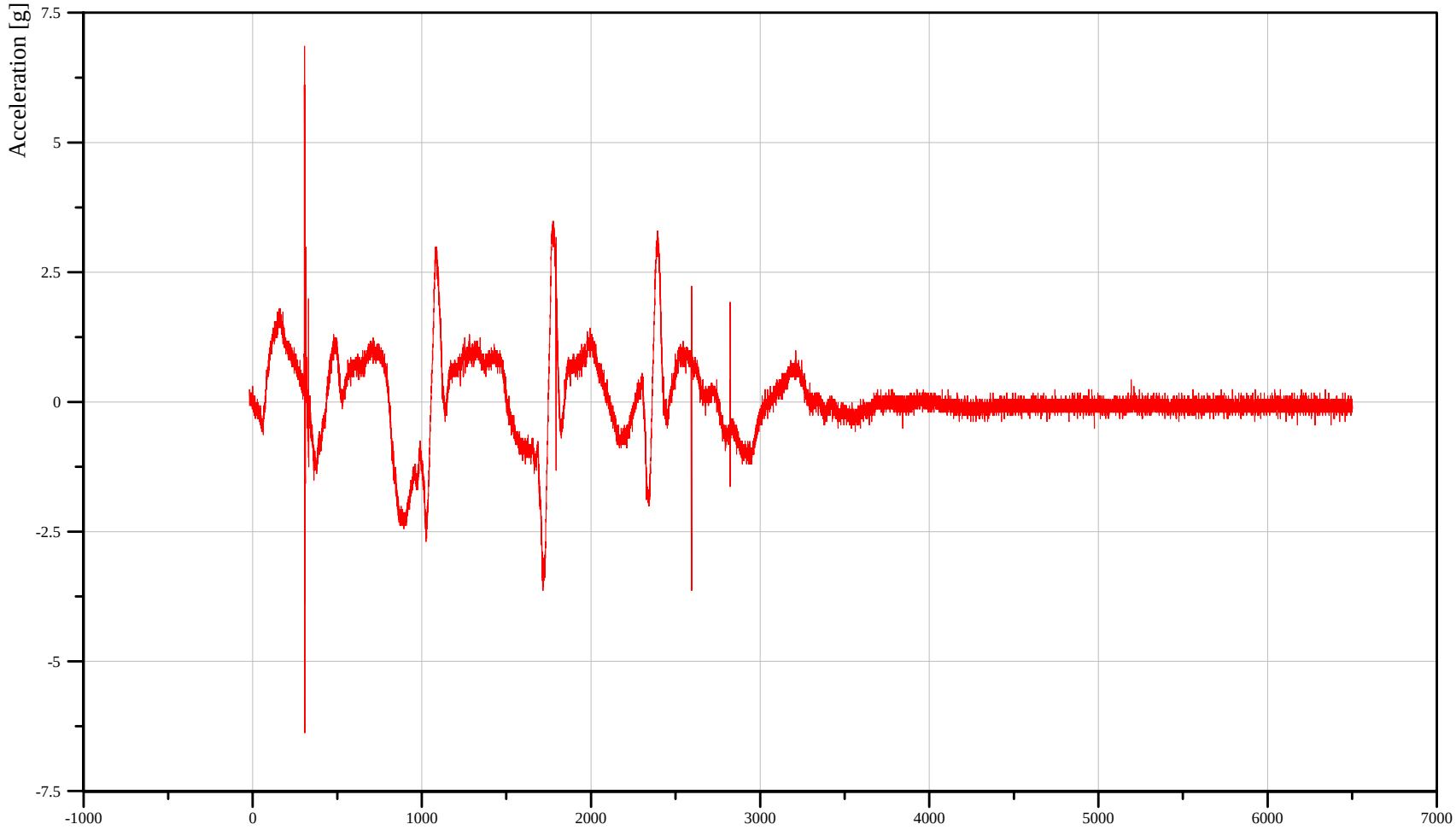
Left Rear Passenger Pelvis Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14PELVCG00H3ACZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-6.38 g at 307.28 ms

Max. Value
6.86 g at 305.92 ms

FMVSS 208 Rollover 2007 Ford Expedition

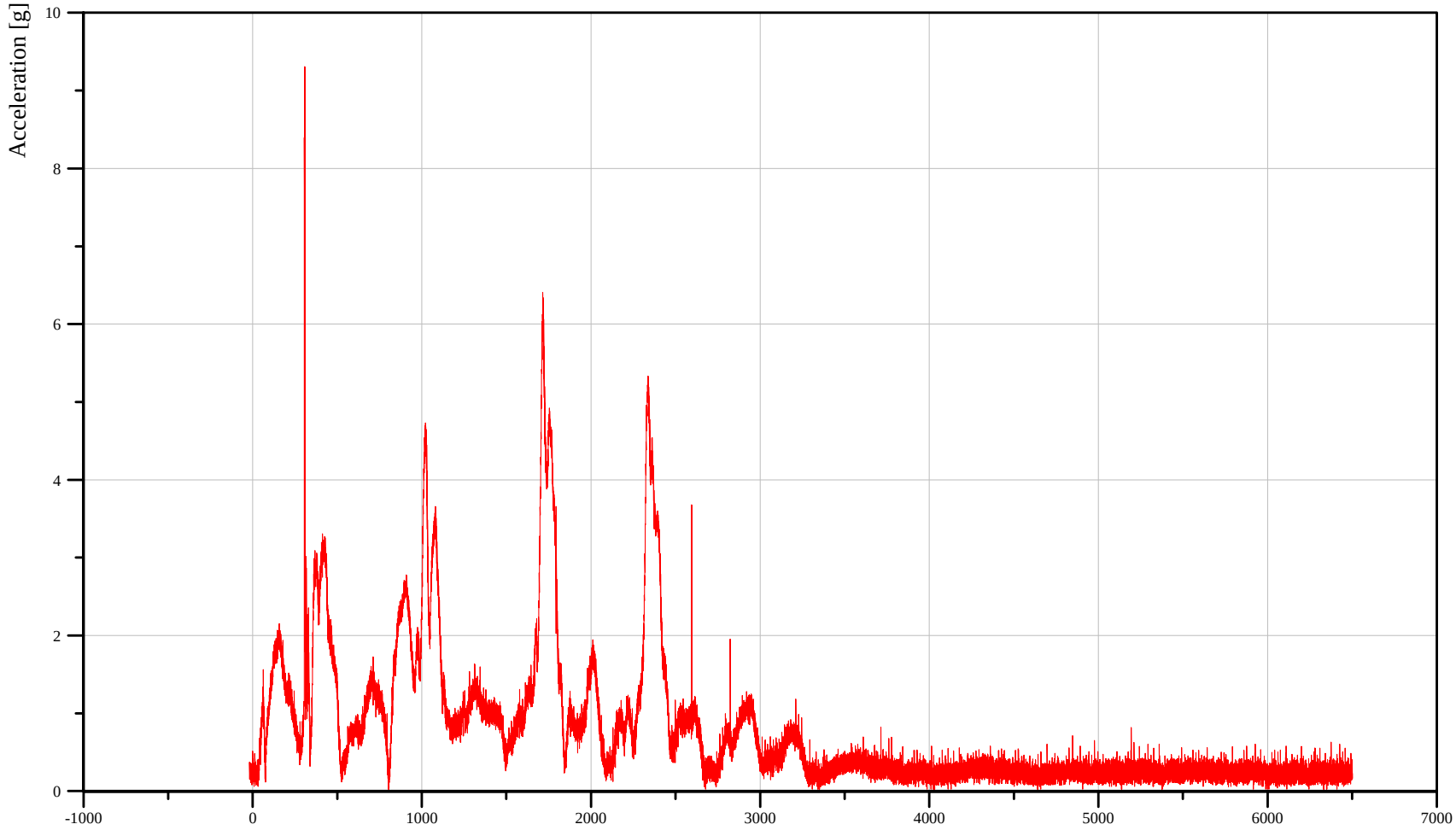
Left Rear Passenger Pelvis Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14PELVCG00H3ACRA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.03 g at 802.56 ms

Max. Value
9.30 g at 306.88 ms

FMVSS 208 Rollover 2007 Ford Expedition

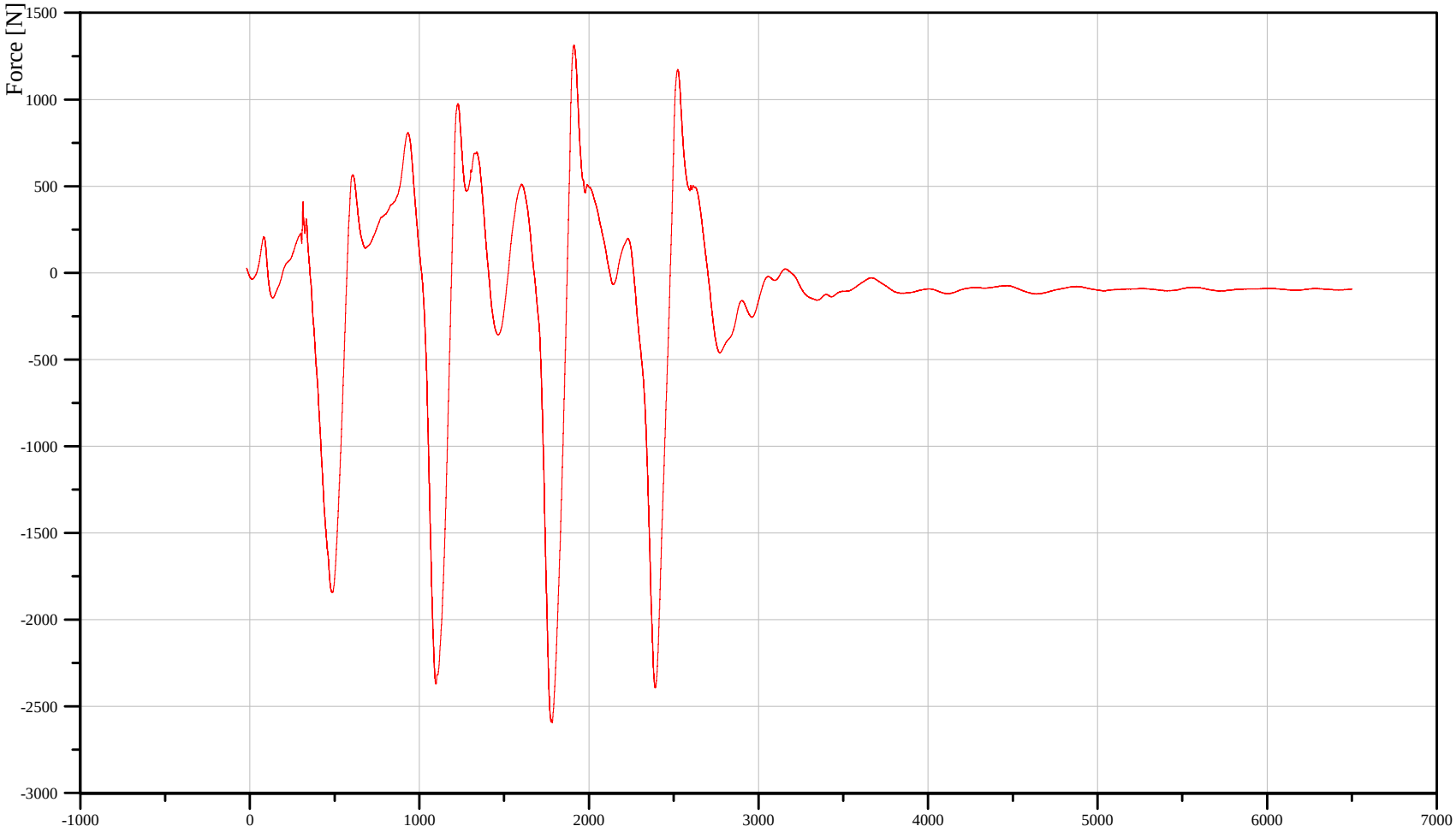
Left Rear Passenger Lower Neck X-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3FOXA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-2,593.50 N at 1,782.56 ms

Max. Value
1,314.87 N at 1,910.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

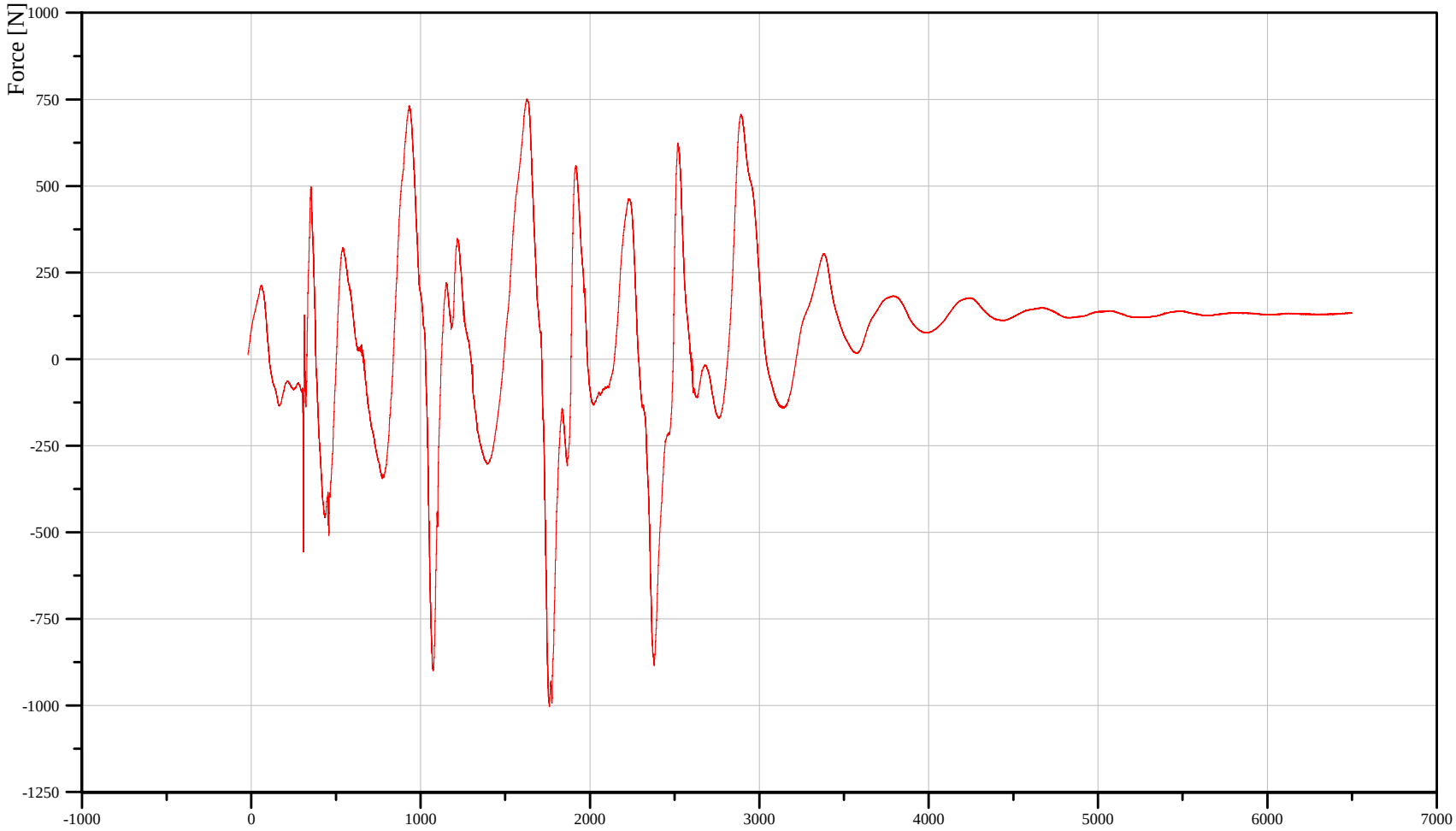
Left Rear Passenger Lower Neck Y-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3FOYA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-1,003.55 N at 1,760.48 ms

Max. Value
750.90 N at 1,625.84 ms

FMVSS 208 Rollover 2007 Ford Expedition

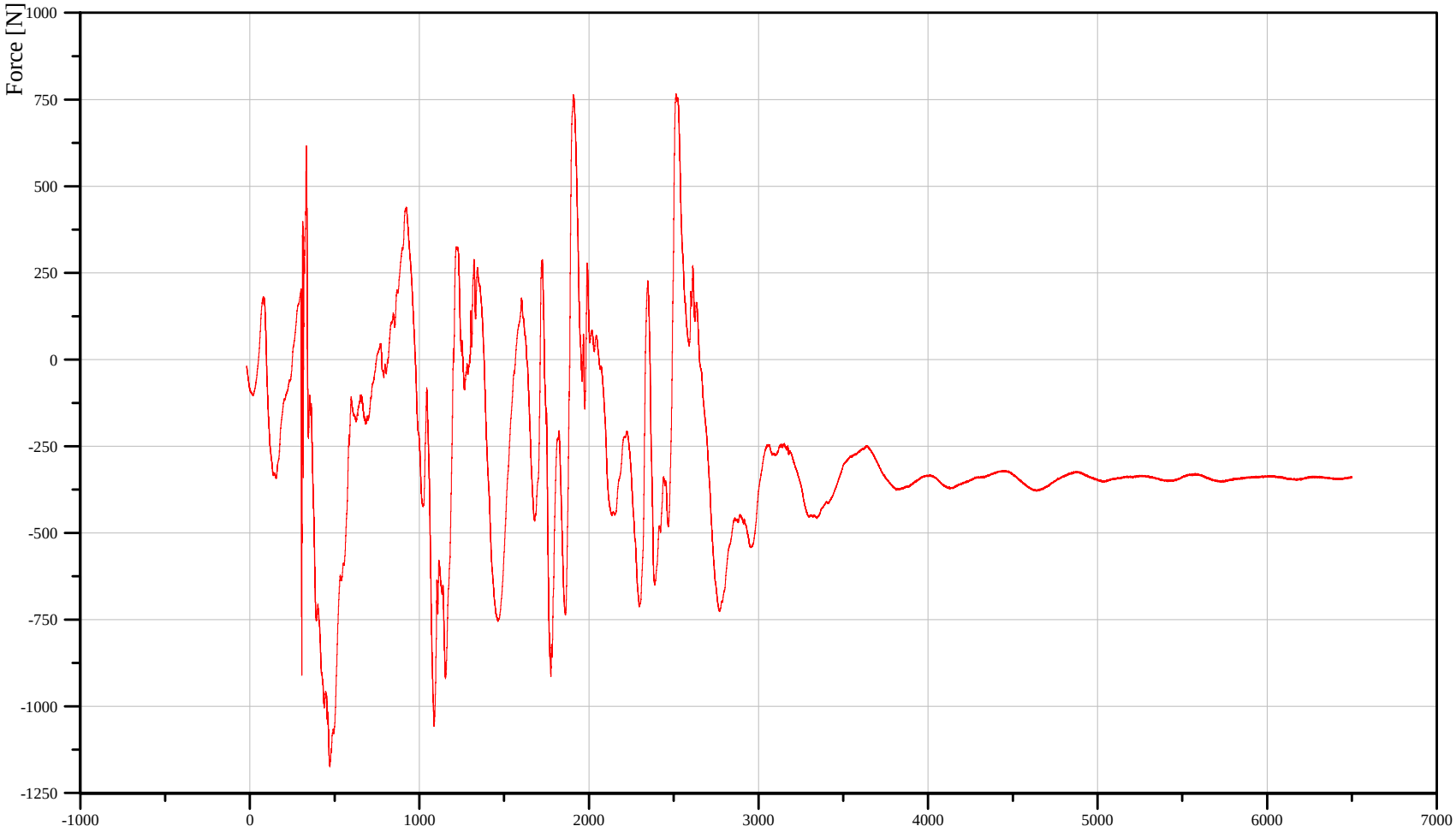
Left Rear Passenger Lower Neck Z-Axis Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3FOZA

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-1,174.59 N at 470.96 ms

Max. Value
766.71 N at 2,512.64 ms

FMVSS 208 Rollover 2007 Ford Expedition

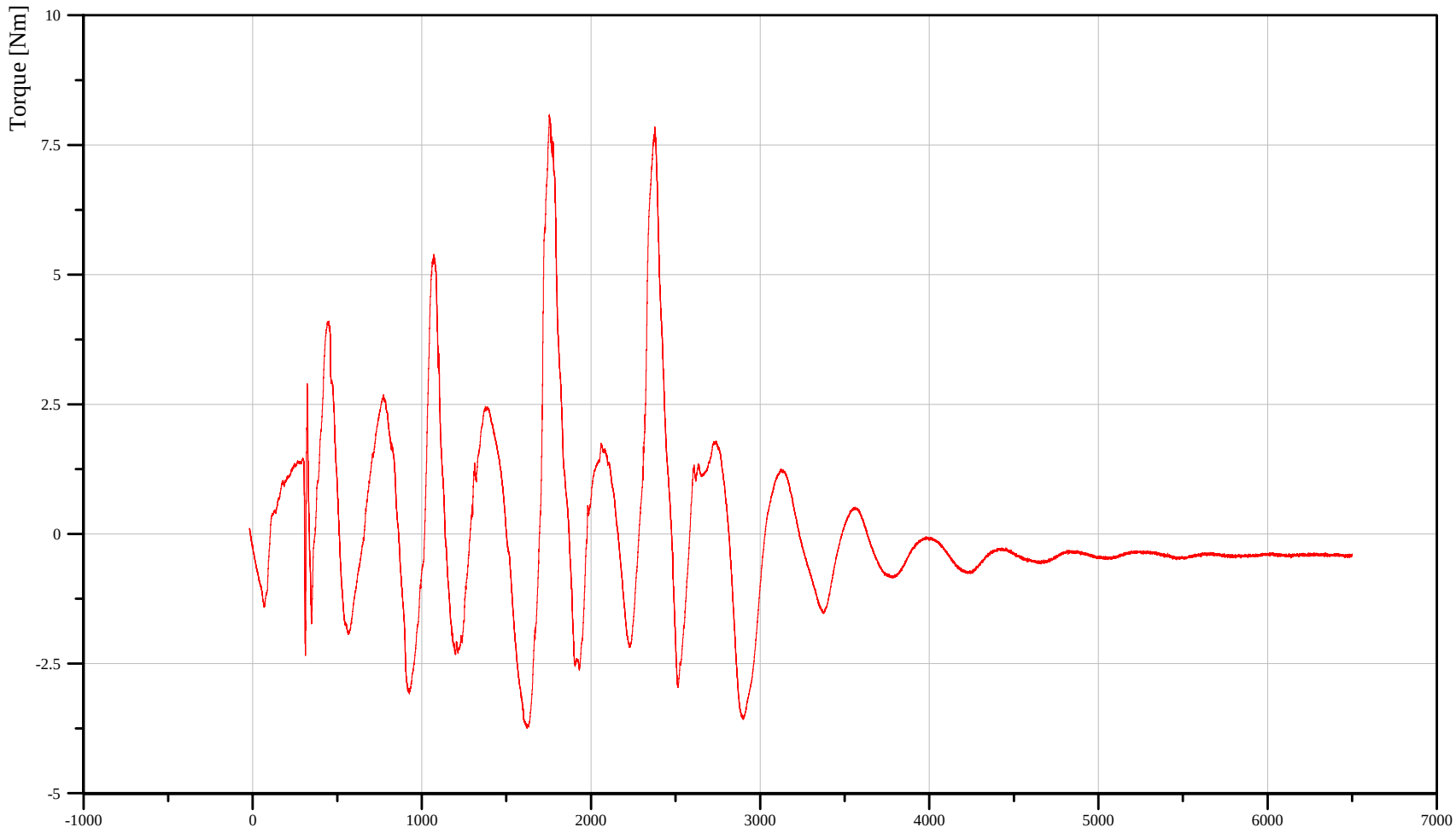
Left Rear Passenger Lower Neck Moment About X Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-3.74 Nm at 1,621.20 ms

Max. Value
8.09 Nm at 1,752.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

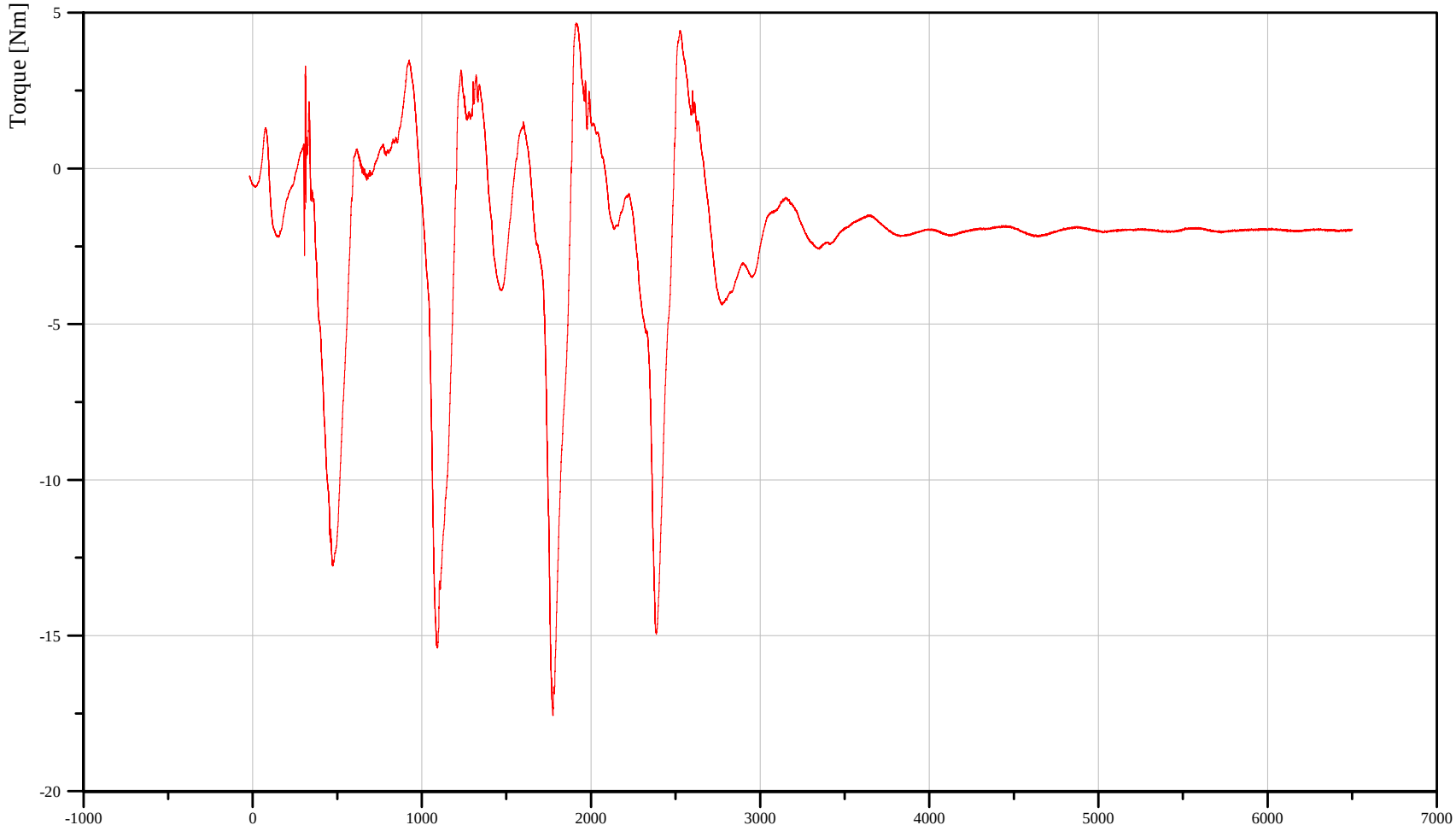
Left Rear Passenger Lower Neck Moment About Y Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3MOYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-17.57 Nm at 1,775.04 ms

Max. Value
4.68 Nm at 1,912.08 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

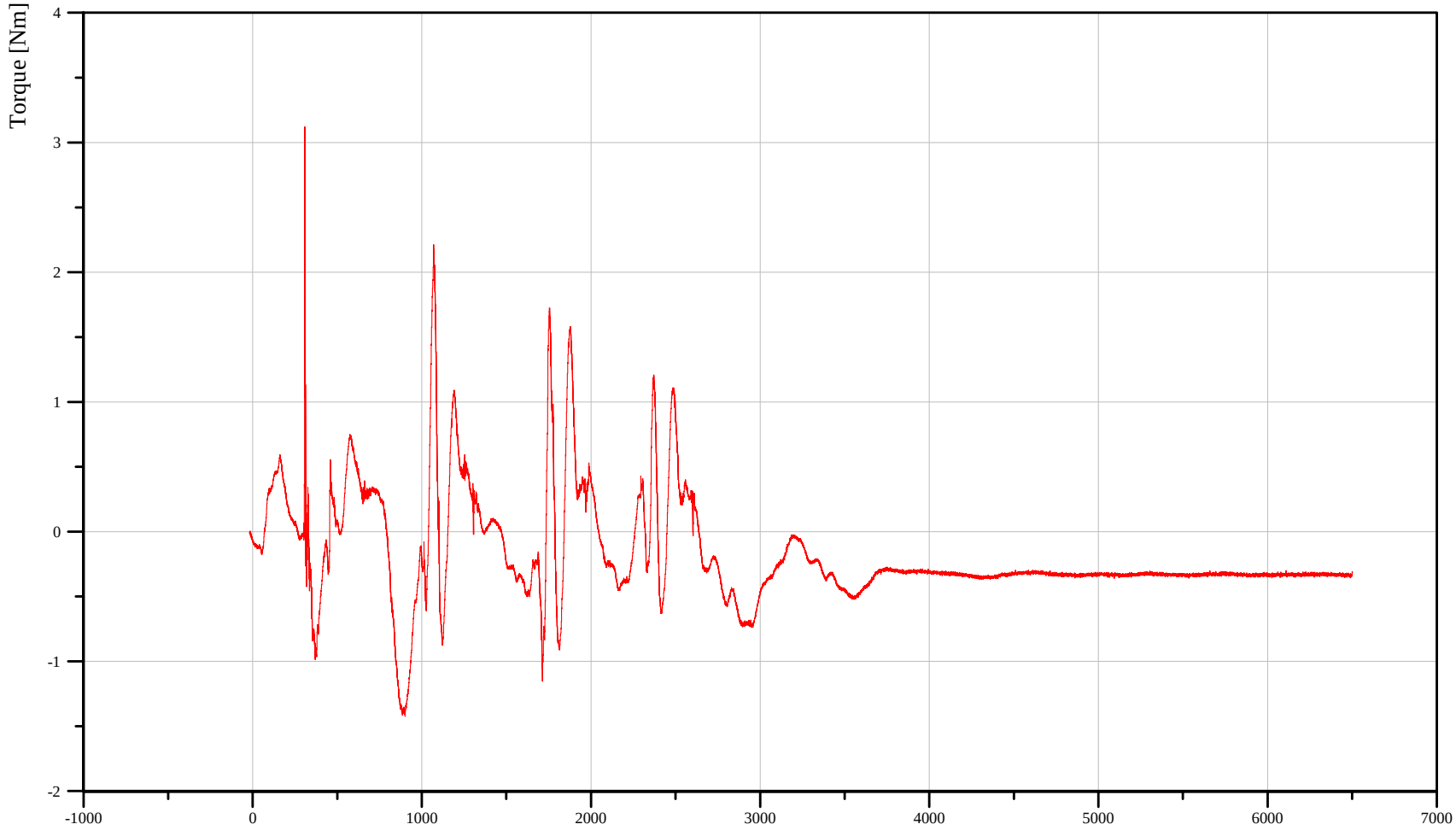
Left Rear Passenger Lower Neck Moment About Z Axis

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14NECKLO00H3MOZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-1.42 Nm at 900.24 ms

Max. Value
3.12 Nm at 308.56 ms

FMVSS 208 Rollover 2007 Ford Expedition

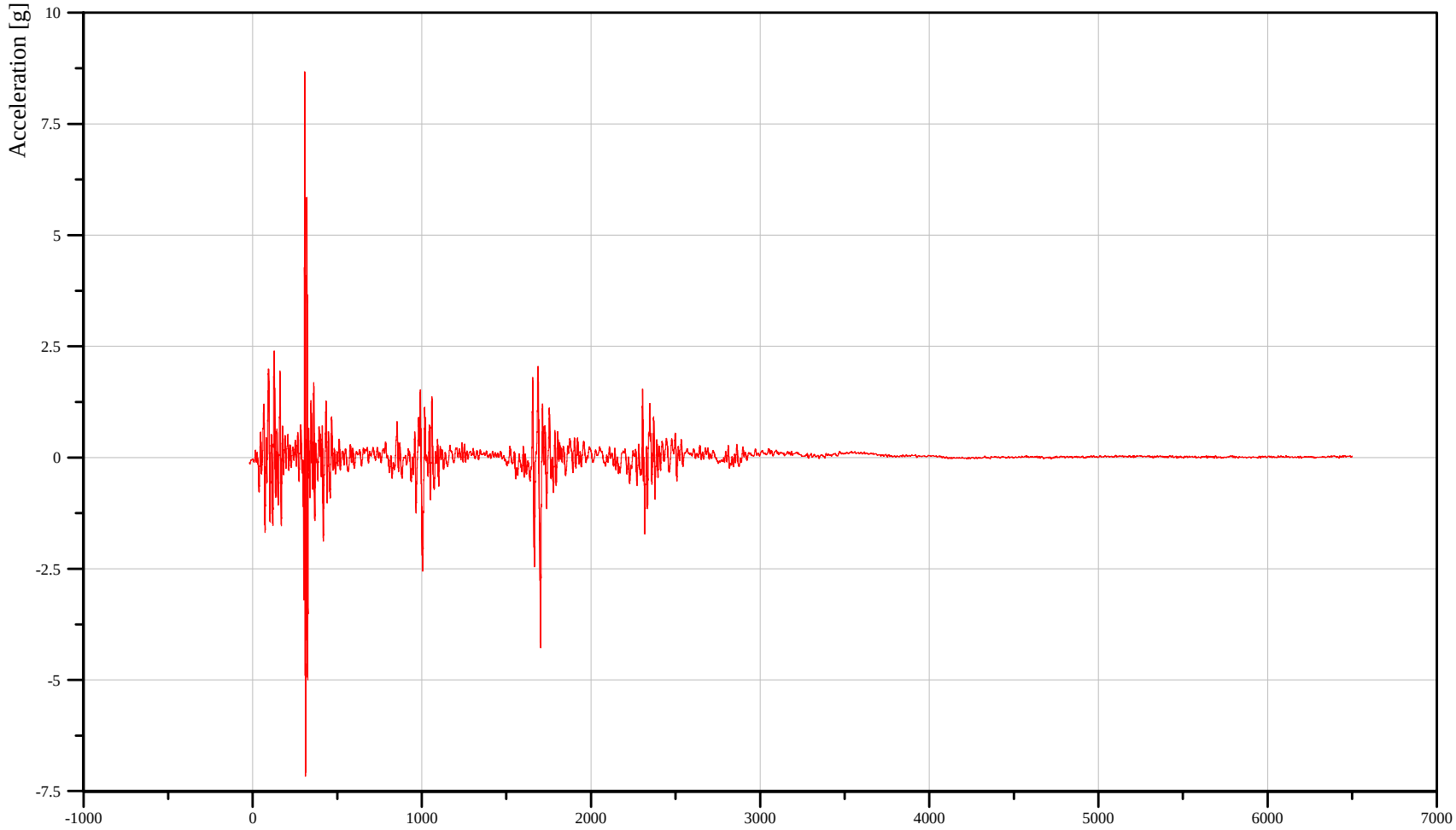
Vehicle Center of Gravity X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-7.17 g at 311.92 ms

Max. Value
8.67 g at 306.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

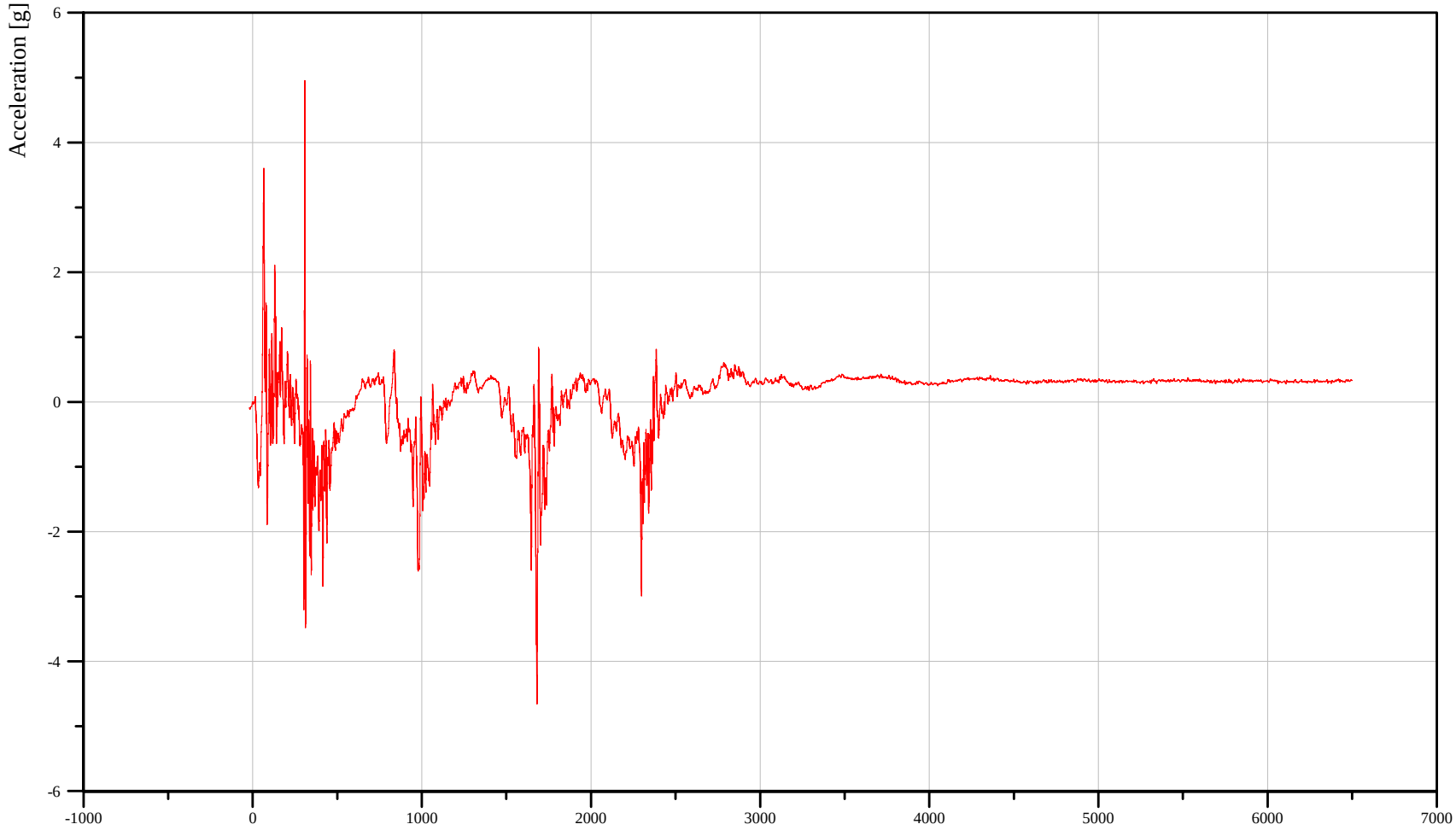
Vehicle Center of Gravity Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.65 g at 1,680.80 ms

Max. Value
4.96 g at 306.88 ms

FMVSS 208 Rollover 2007 Ford Expedition

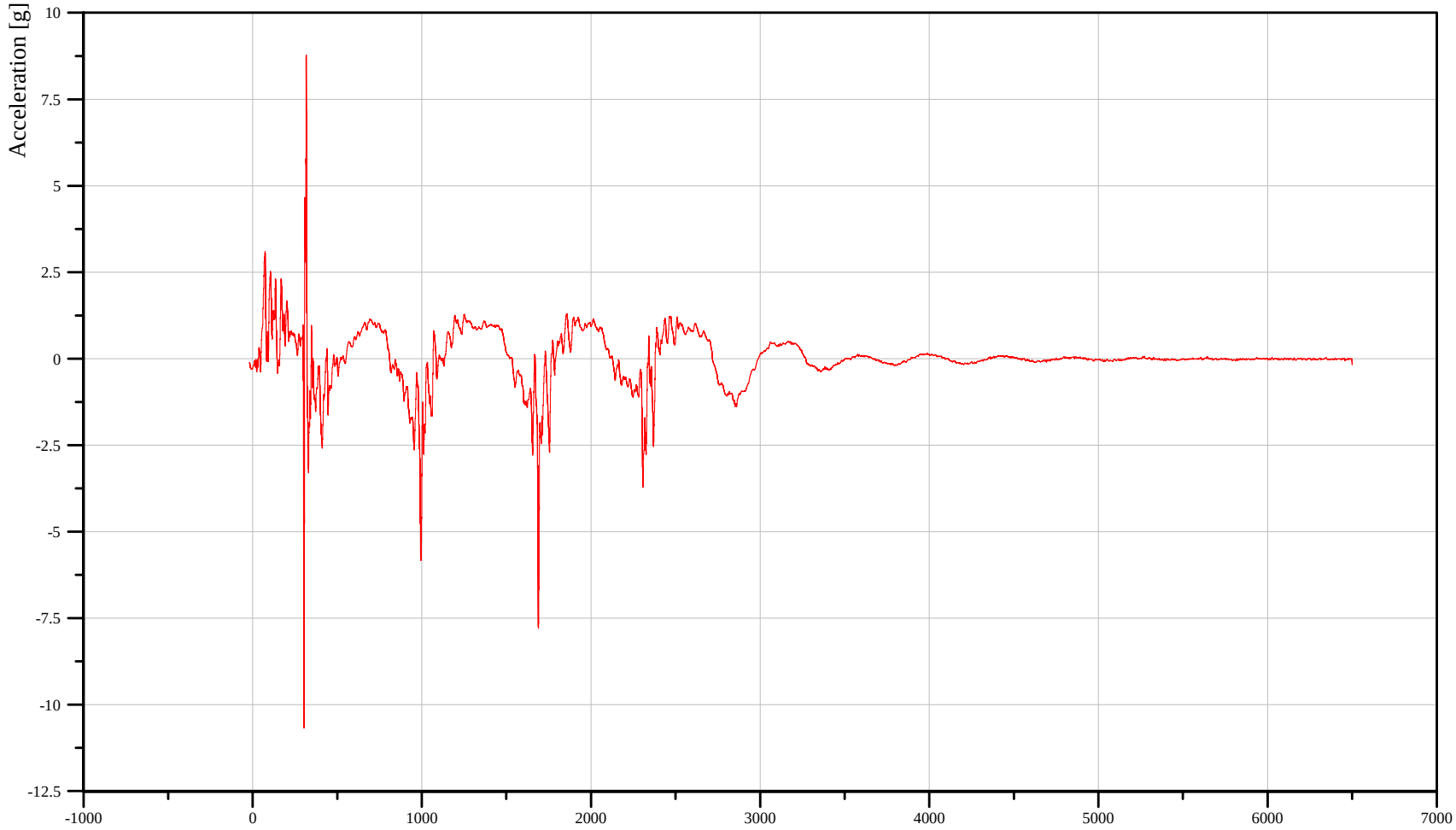
Vehicle Center of Gravity Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-10.68 g at 303.28 ms

Max. Value
8.78 g at 316.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

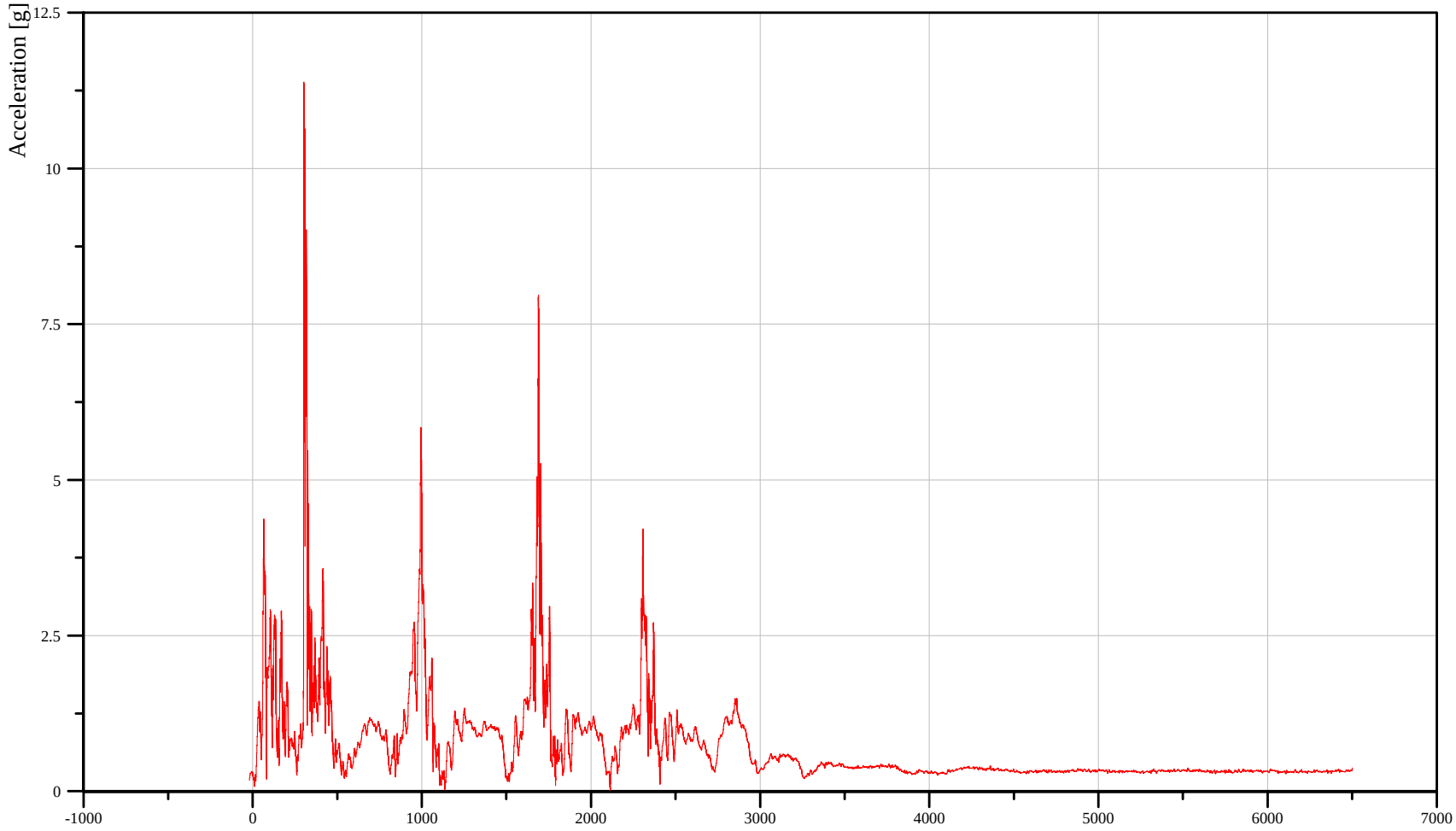
Vehicle Center of Gravity Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.02 g at 2,113.04 ms

Max. Value
11.39 g at 303.12 ms

FMVSS 208 Rollover 2007 Ford Expedition

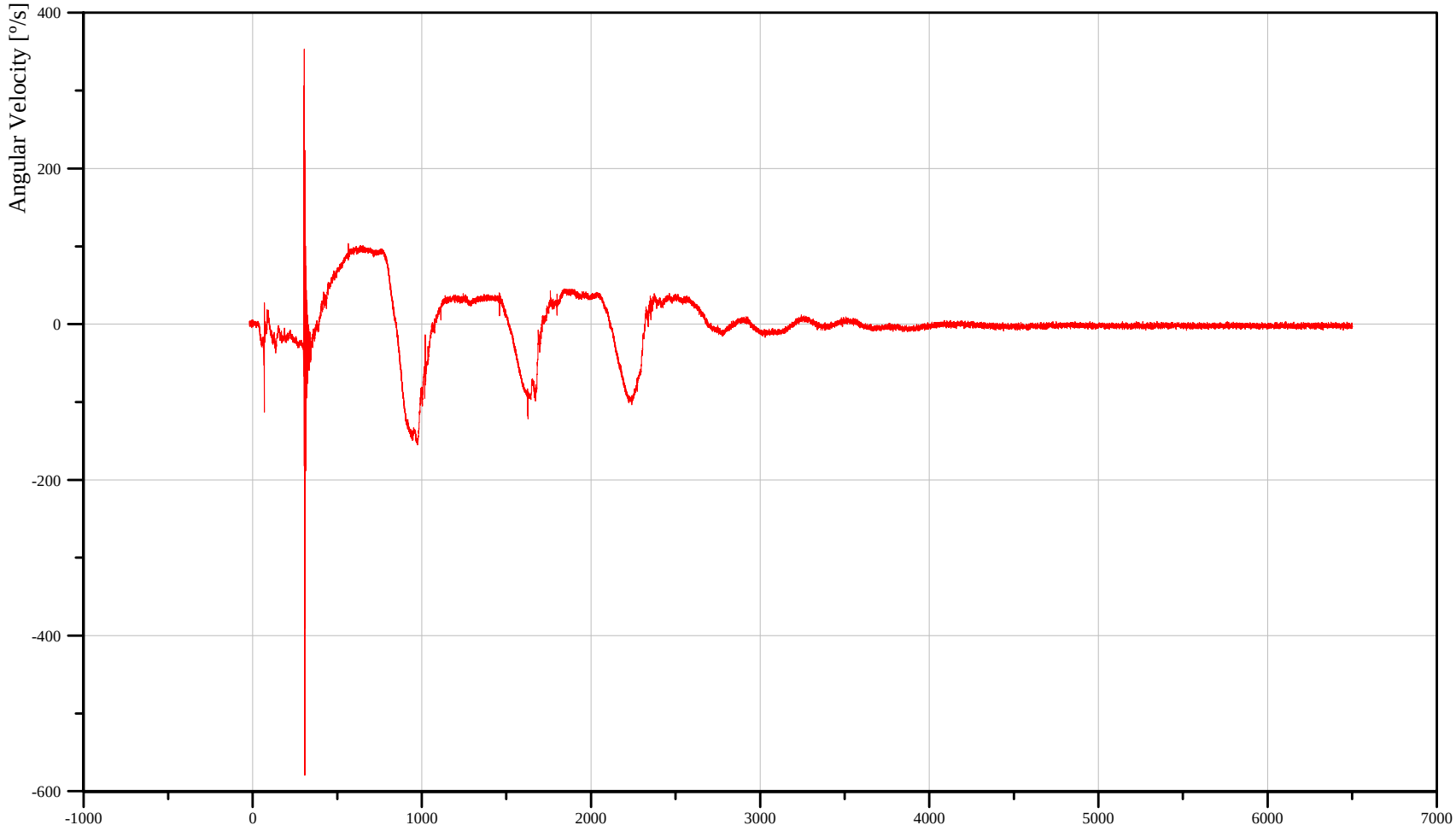
Vehicle Roll Rate

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000AVXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value	Max. Value
-579.61 °/s at 307.68 ms	353.31 °/s at 304.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

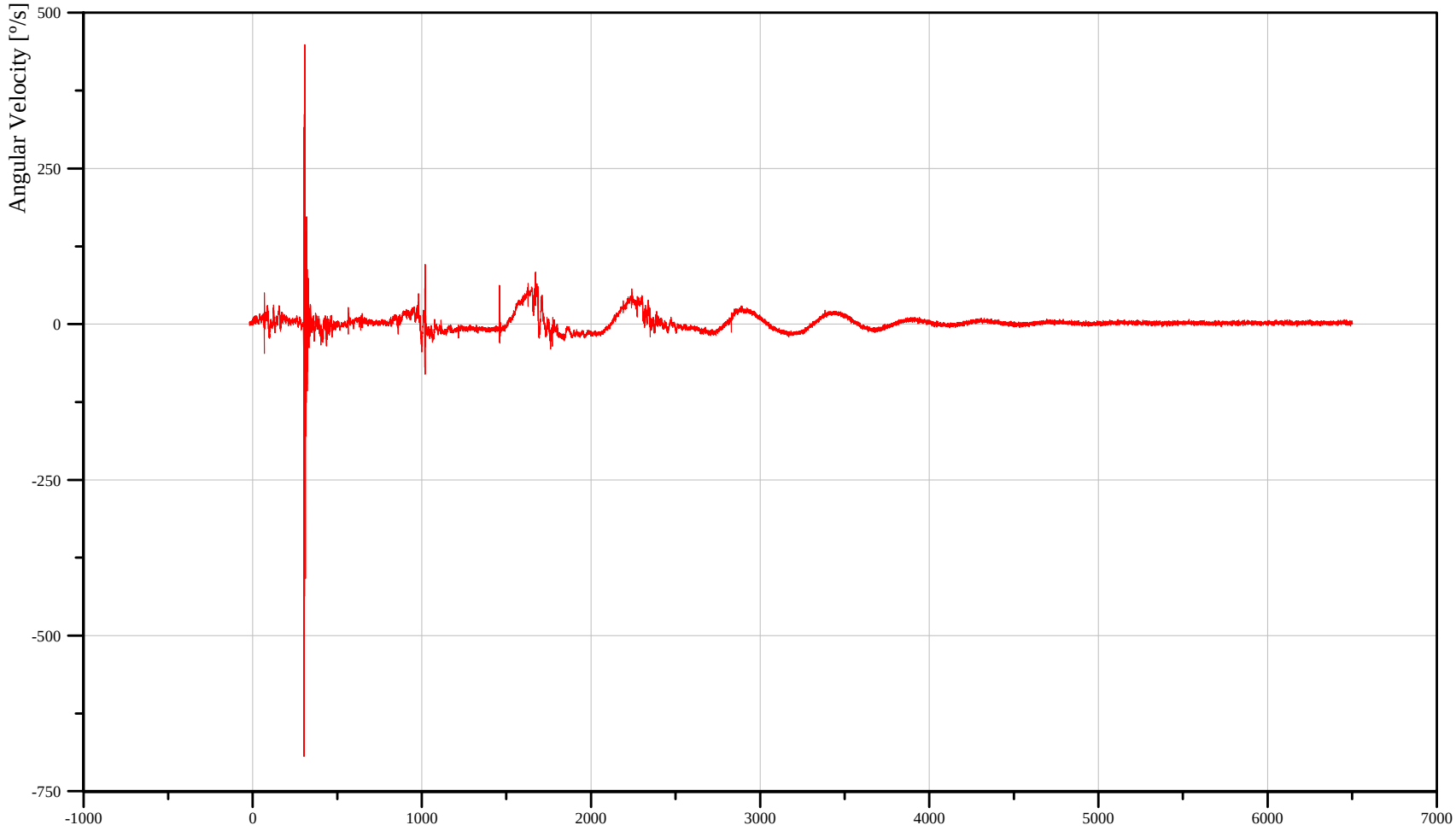
Vehicle Pitch Rate

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000AVYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-693.94 °/s at 303.28 ms

Max. Value
448.75 °/s at 308.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

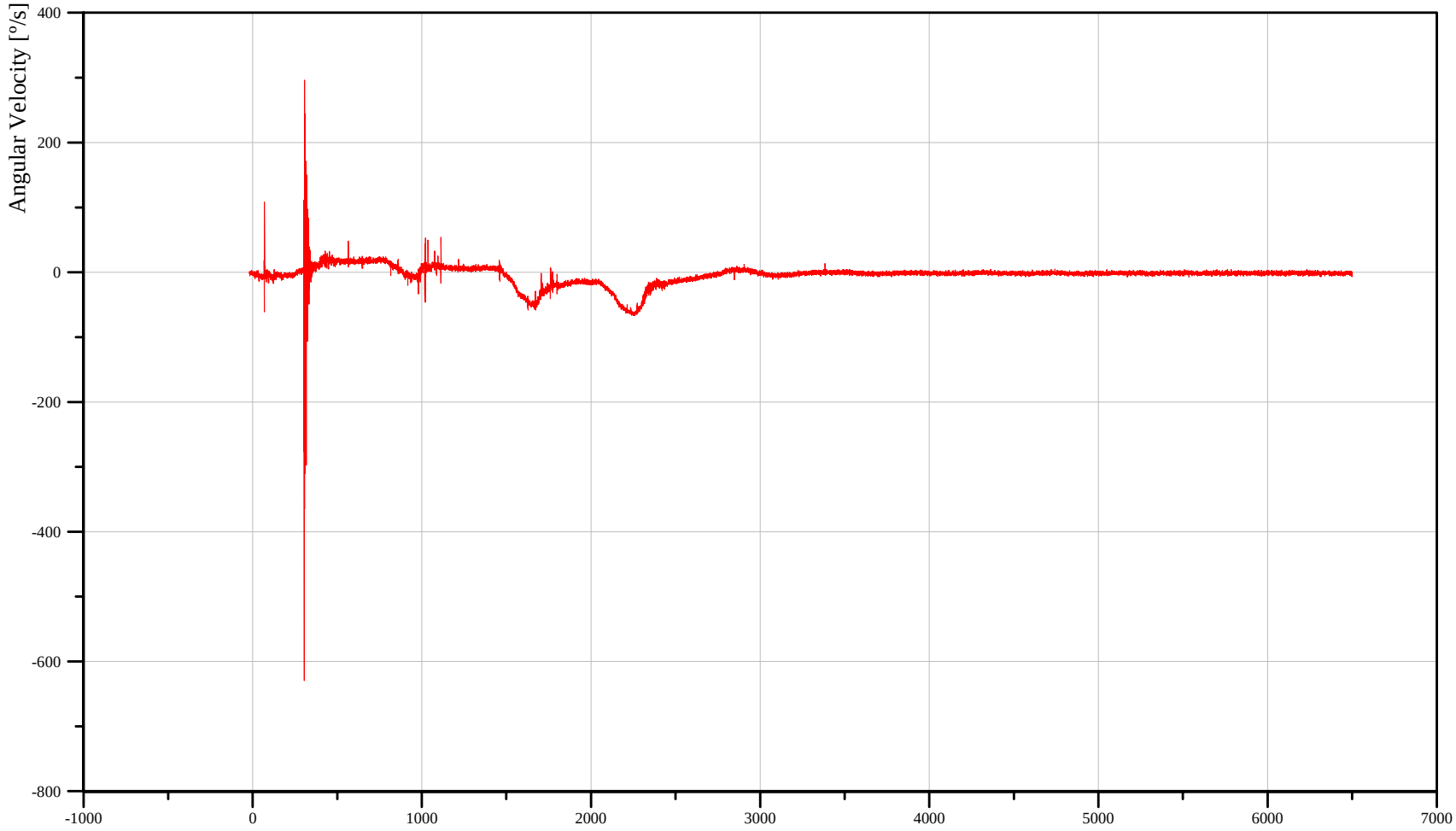
Vehicle Yaw Rate

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCCG0000AVZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-629.55 °/s at 303.76 ms

Max. Value
295.95 °/s at 306.72 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

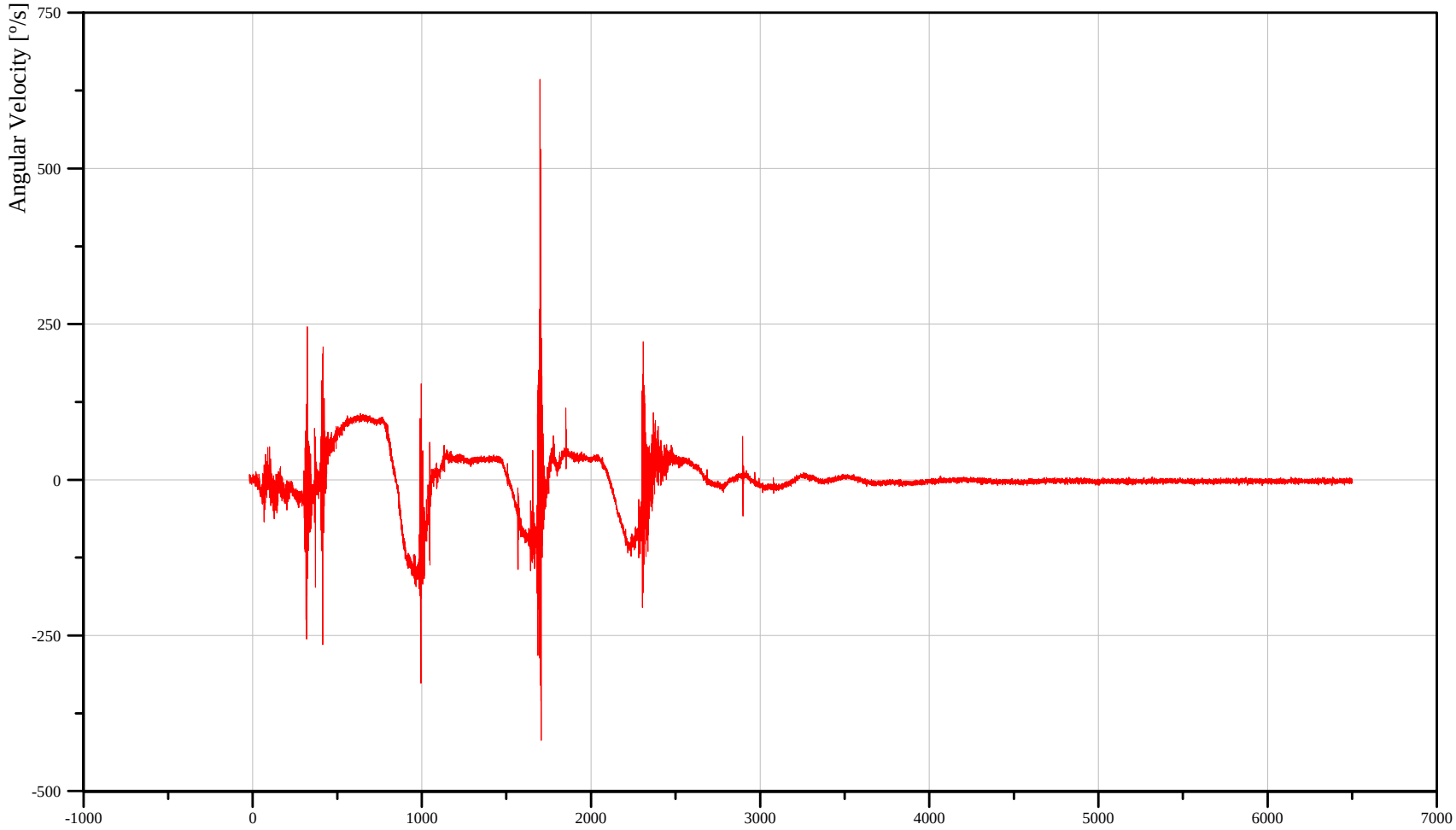
Rear Deck Roll Rate Redundant

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCREDK00AVXB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-418.55 °/s at 1,705.28 ms

Max. Value
643.05 °/s at 1,698.48 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

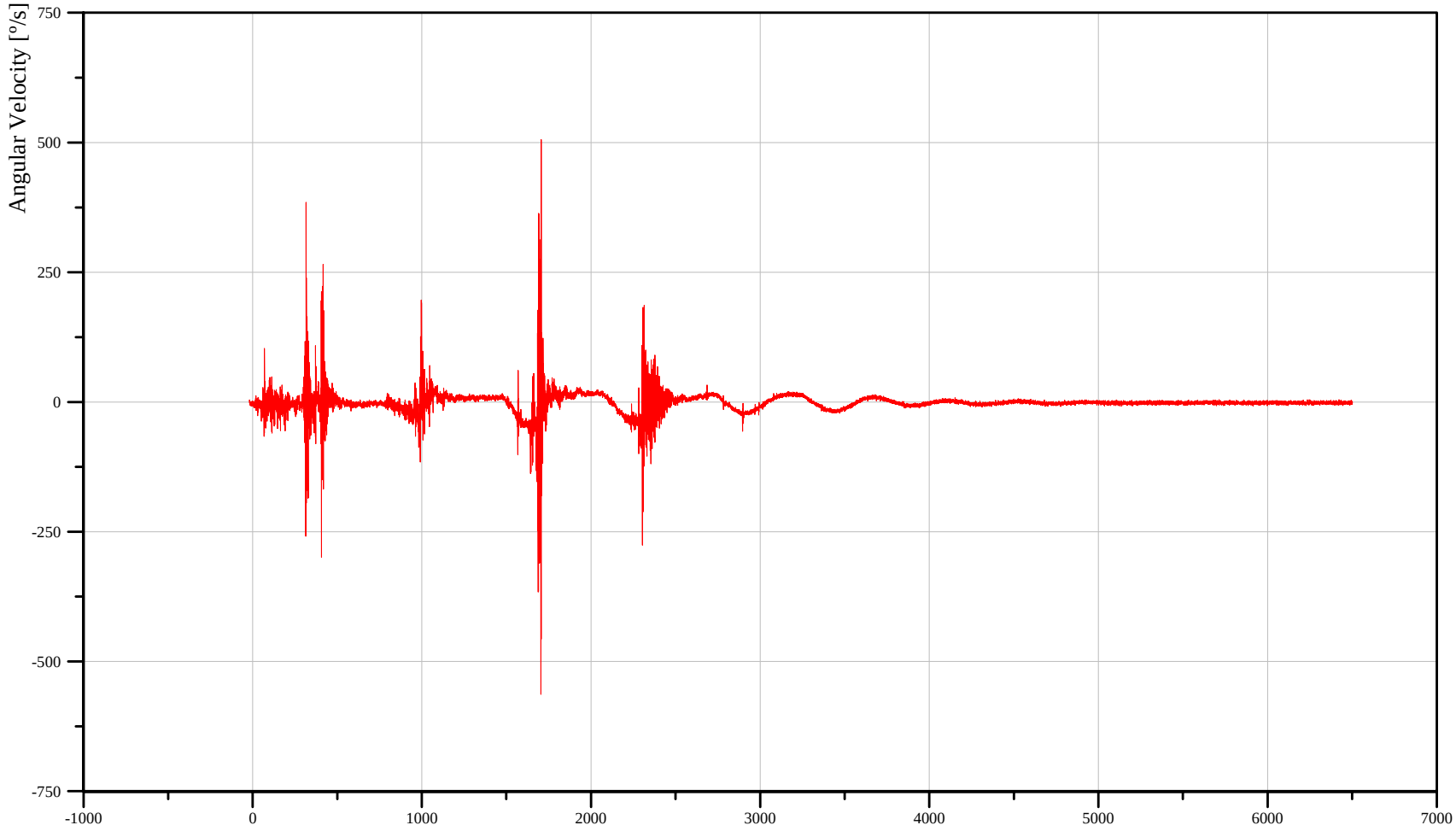
Rear Deck Pitch Rate Redundant

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCREDK00AVYB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-563.34 °/s at 1,704.16 ms

Max. Value
505.63 °/s at 1,704.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

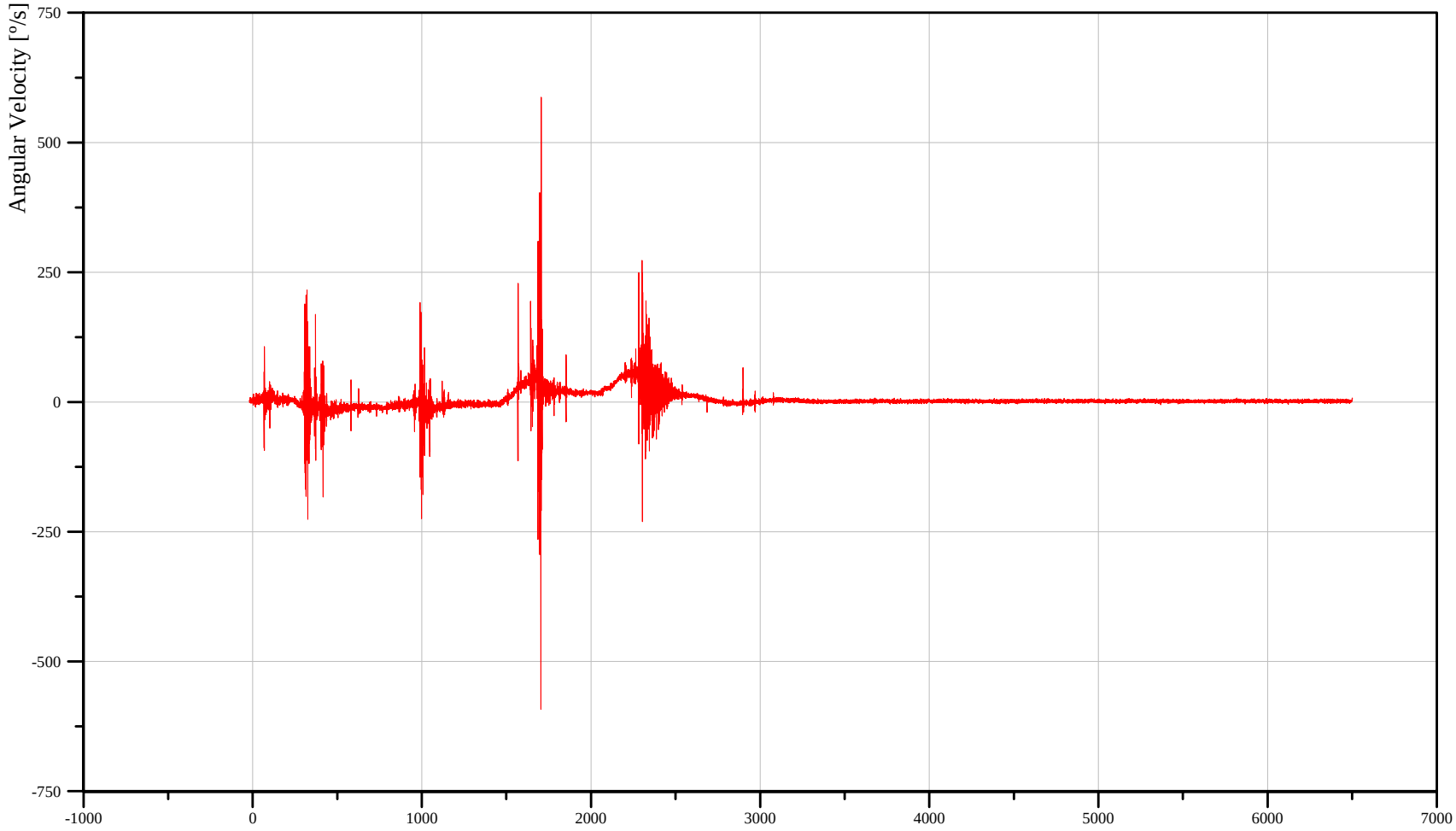
Rear Deck Yaw Rate Redundant

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10VEHCREDK00AVZB

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_600

Min. Value
-591.75 °/s at 1,703.28 ms

Max. Value
587.01 °/s at 1,704.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

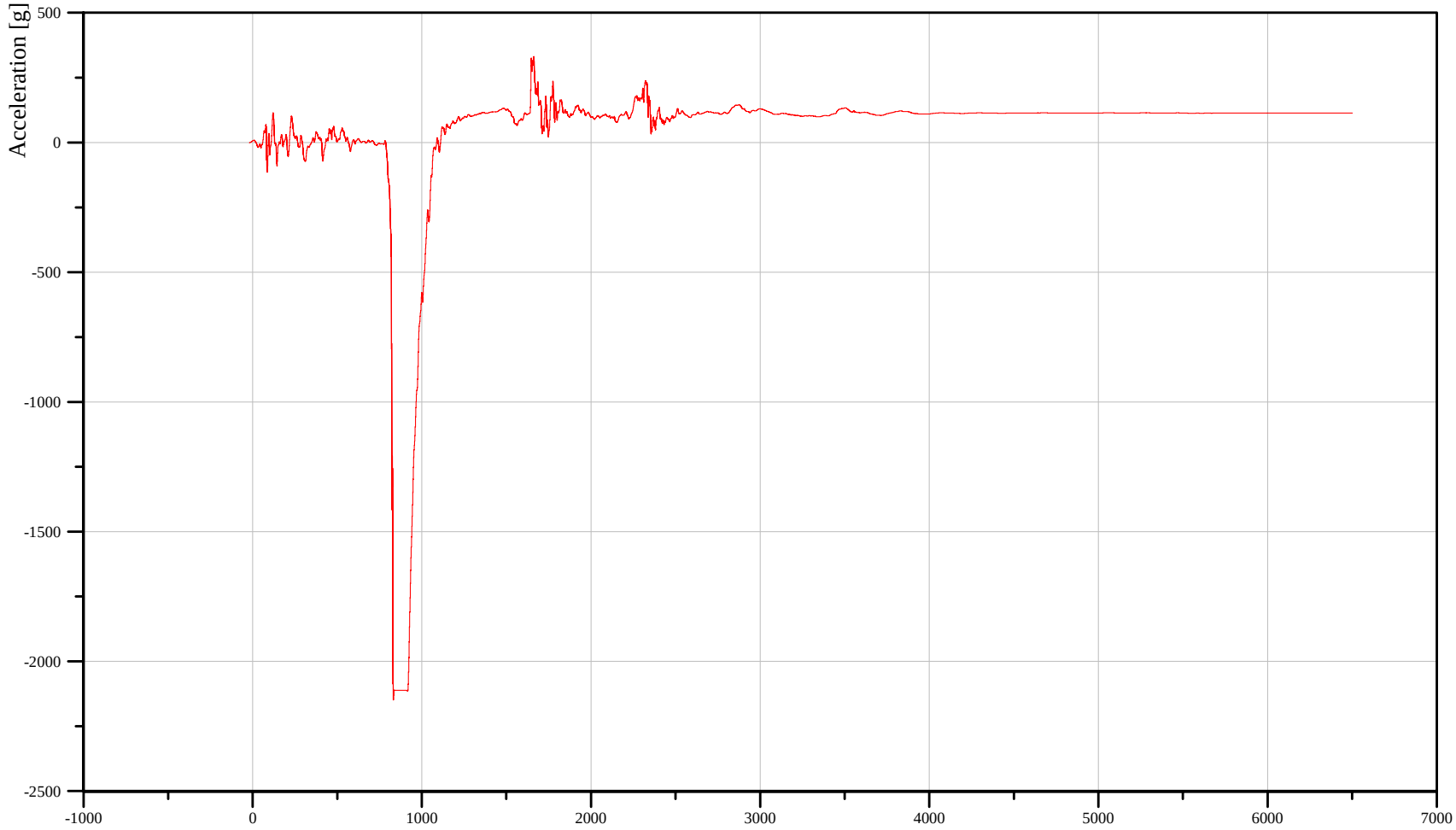
Top of Engine X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNTP0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2,149.04 g at 831.36 ms

Max. Value
331.67 g at 1,661.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

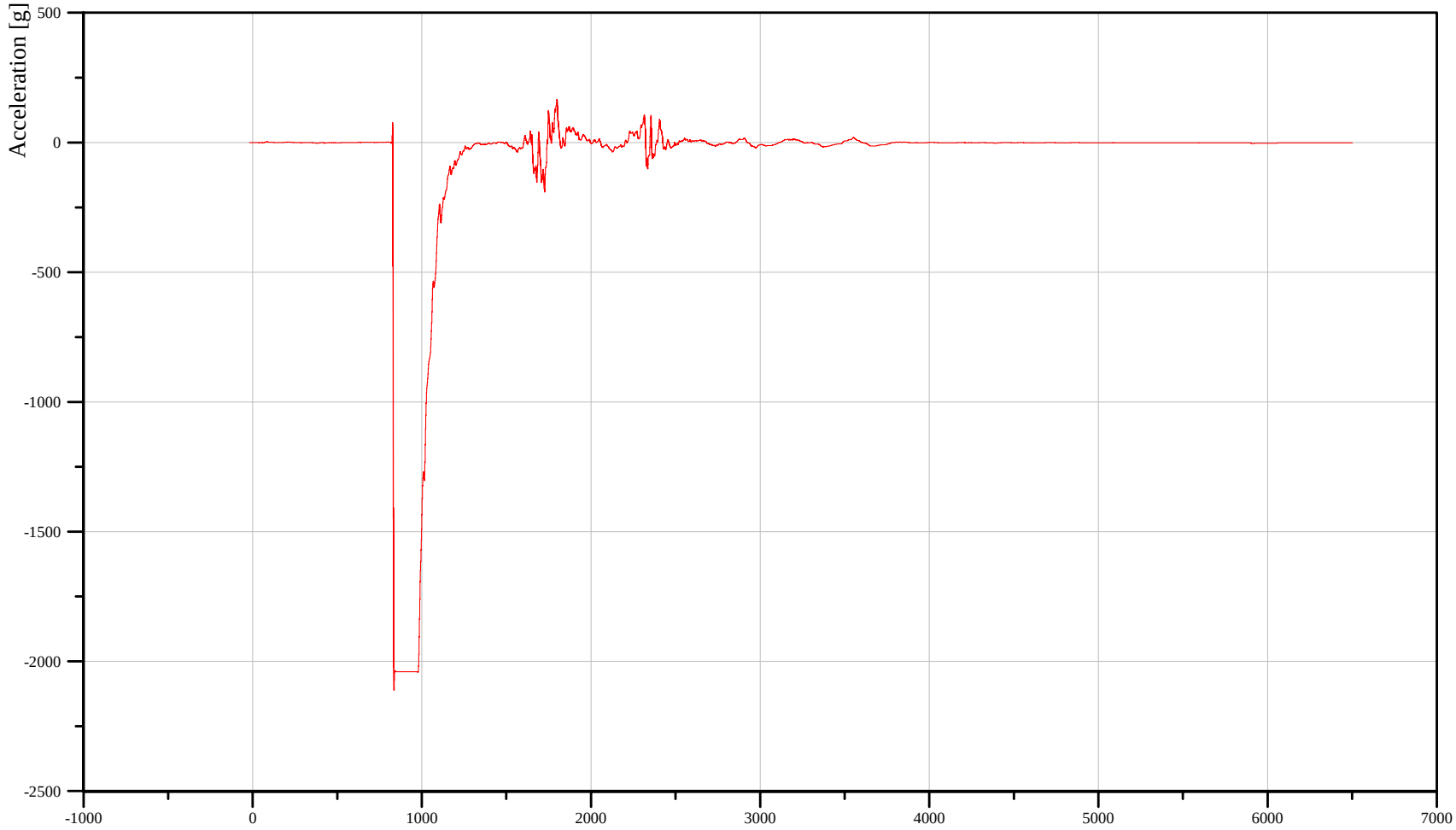
Top of Engine Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNTP0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2,111.11 g at 834.72 ms

Max. Value
166.45 g at 1,798.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

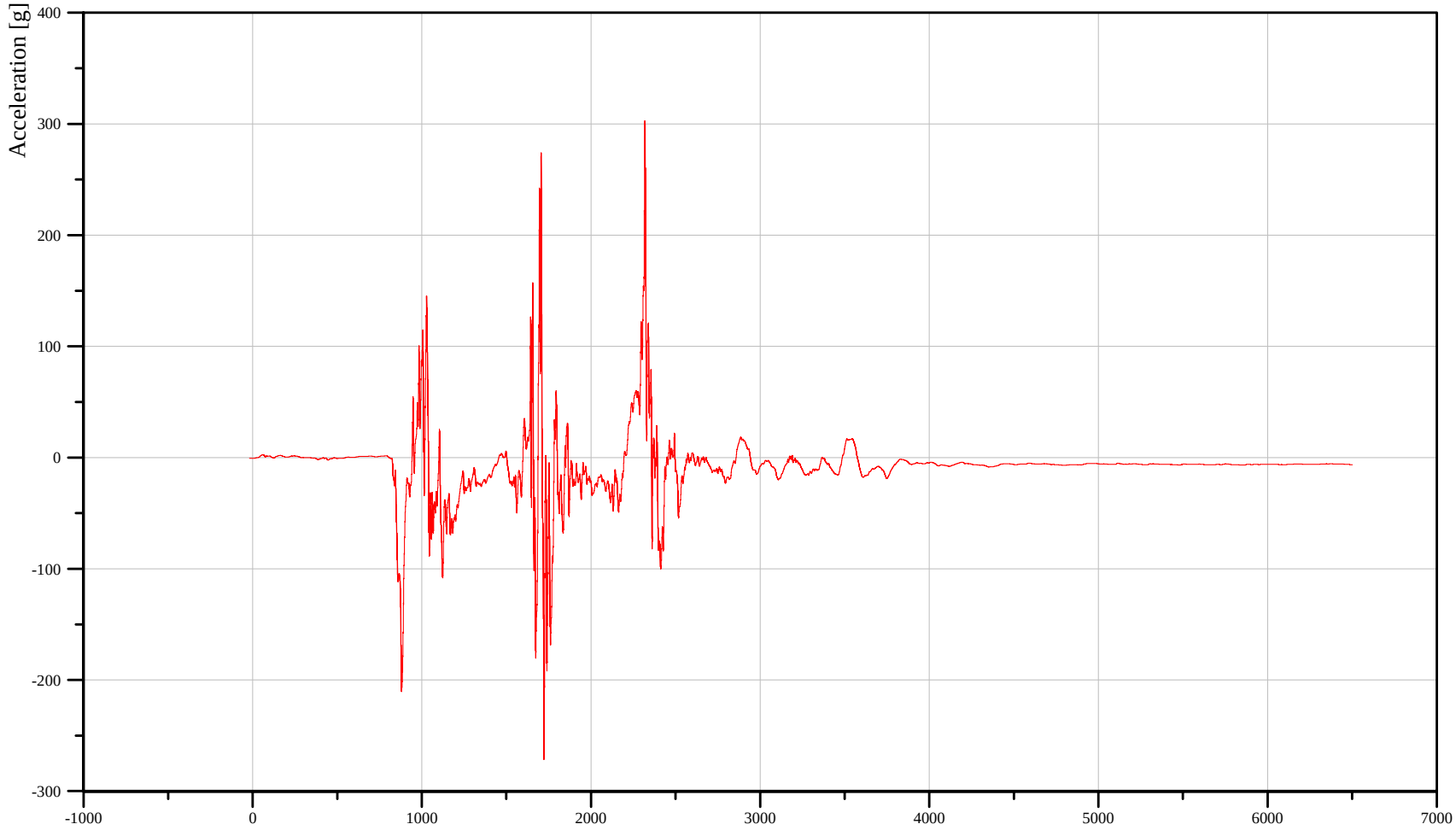
Top of Engine Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNTP0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-271.64 g at 1,721.92 ms

Max. Value
302.97 g at 2,318.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

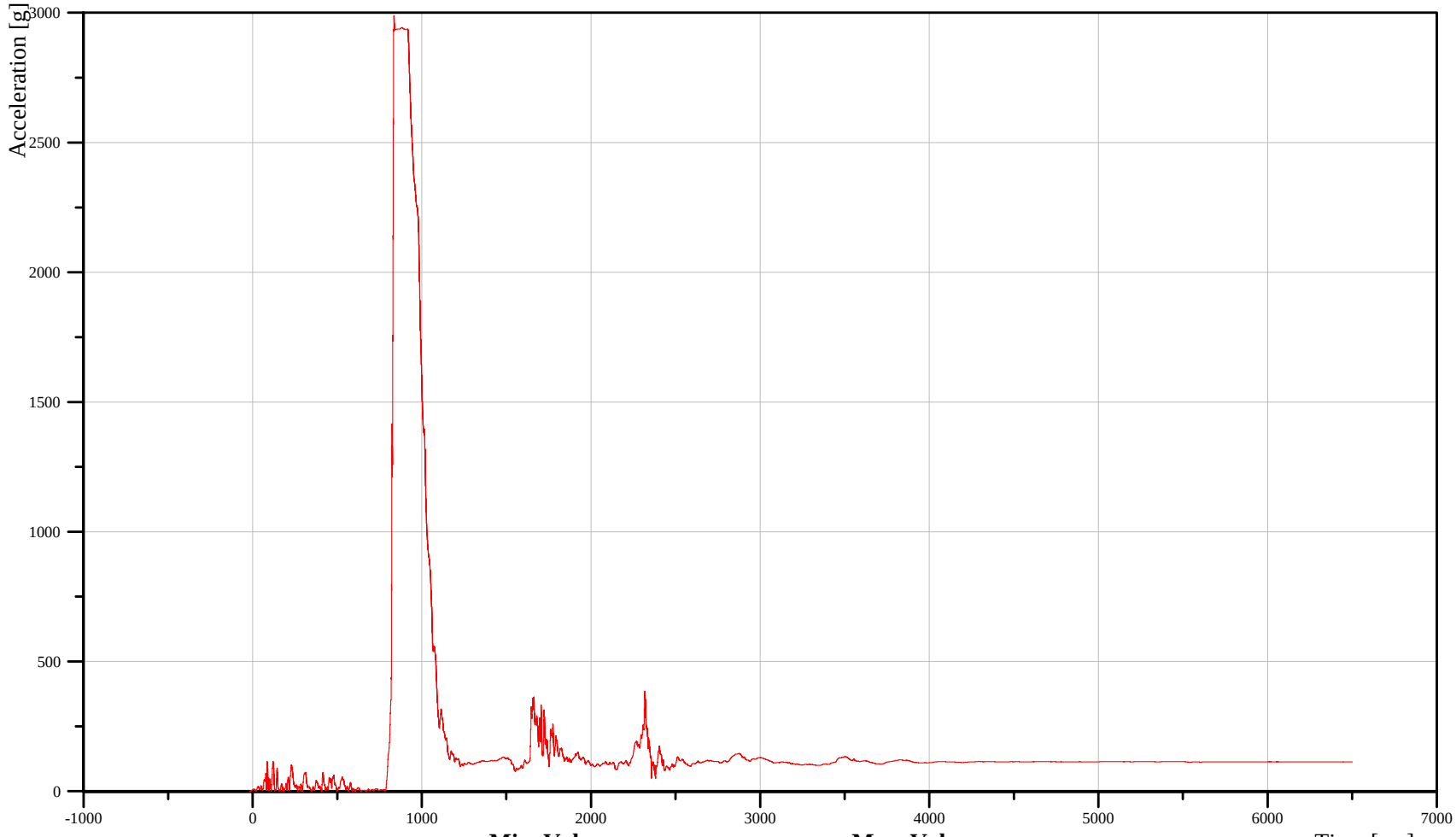
Top of Engine Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNTP0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.23 g at 588.08 ms

Max. Value
2,988.72 g at 834.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

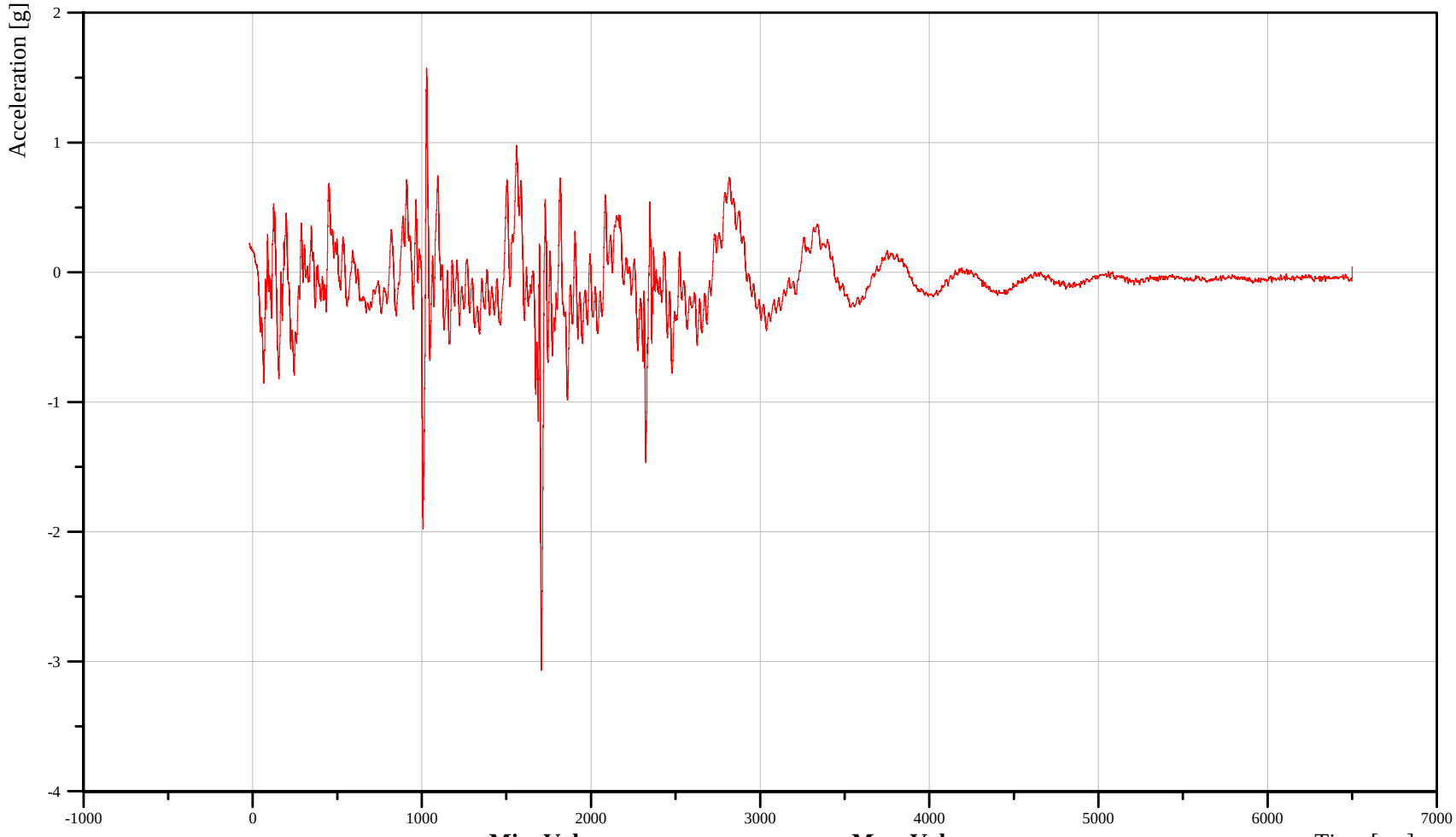
Bottom of Engine X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNBO0000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.07 g at 1,705.84 ms

Max. Value
1.57 g at 1,027.36 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

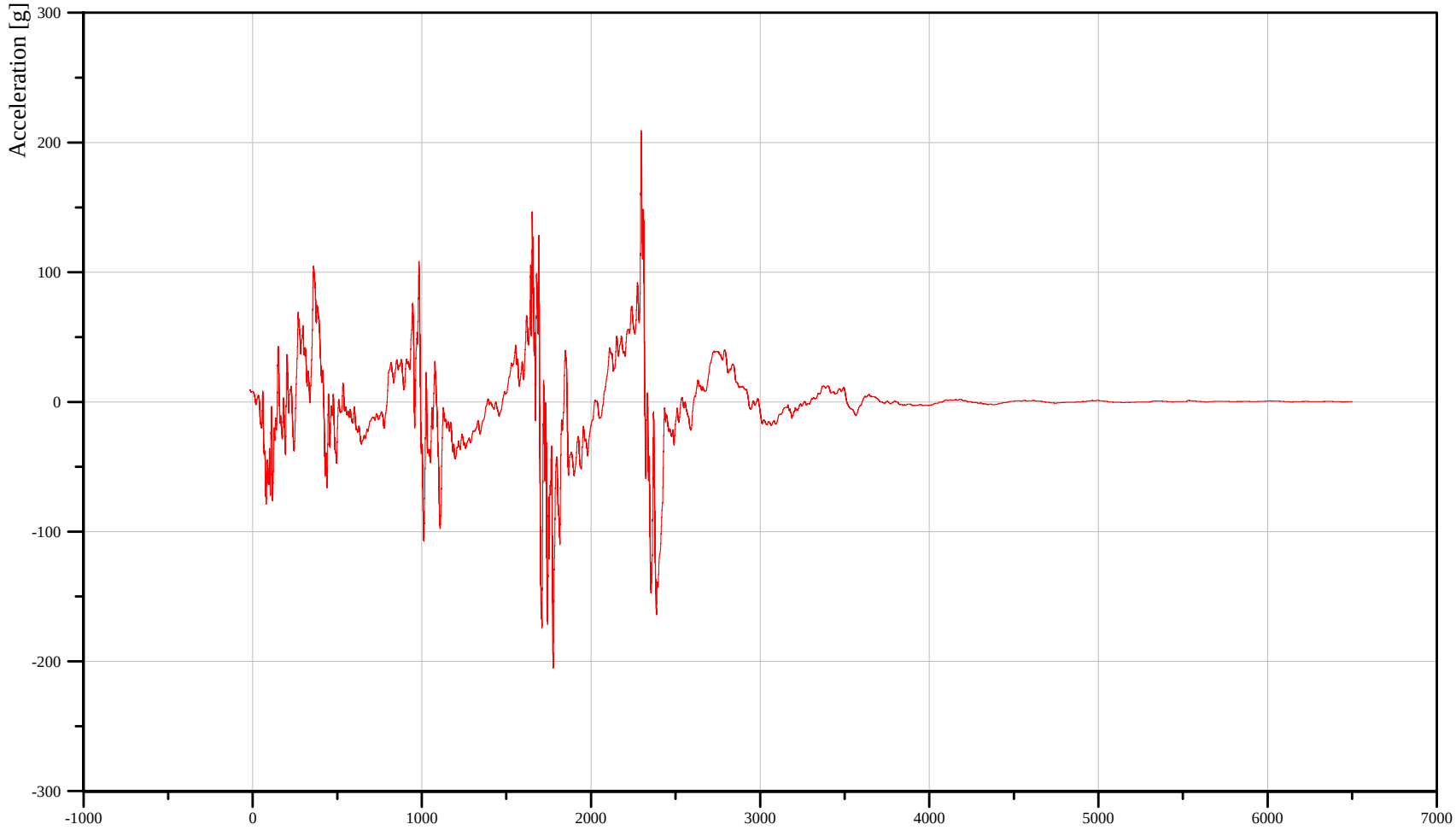
Bottom of Engine Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNBO0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-205.40 g at 1,775.68 ms

Max. Value
209.42 g at 2,296.40 ms

FMVSS 208 Rollover 2007 Ford Expedition

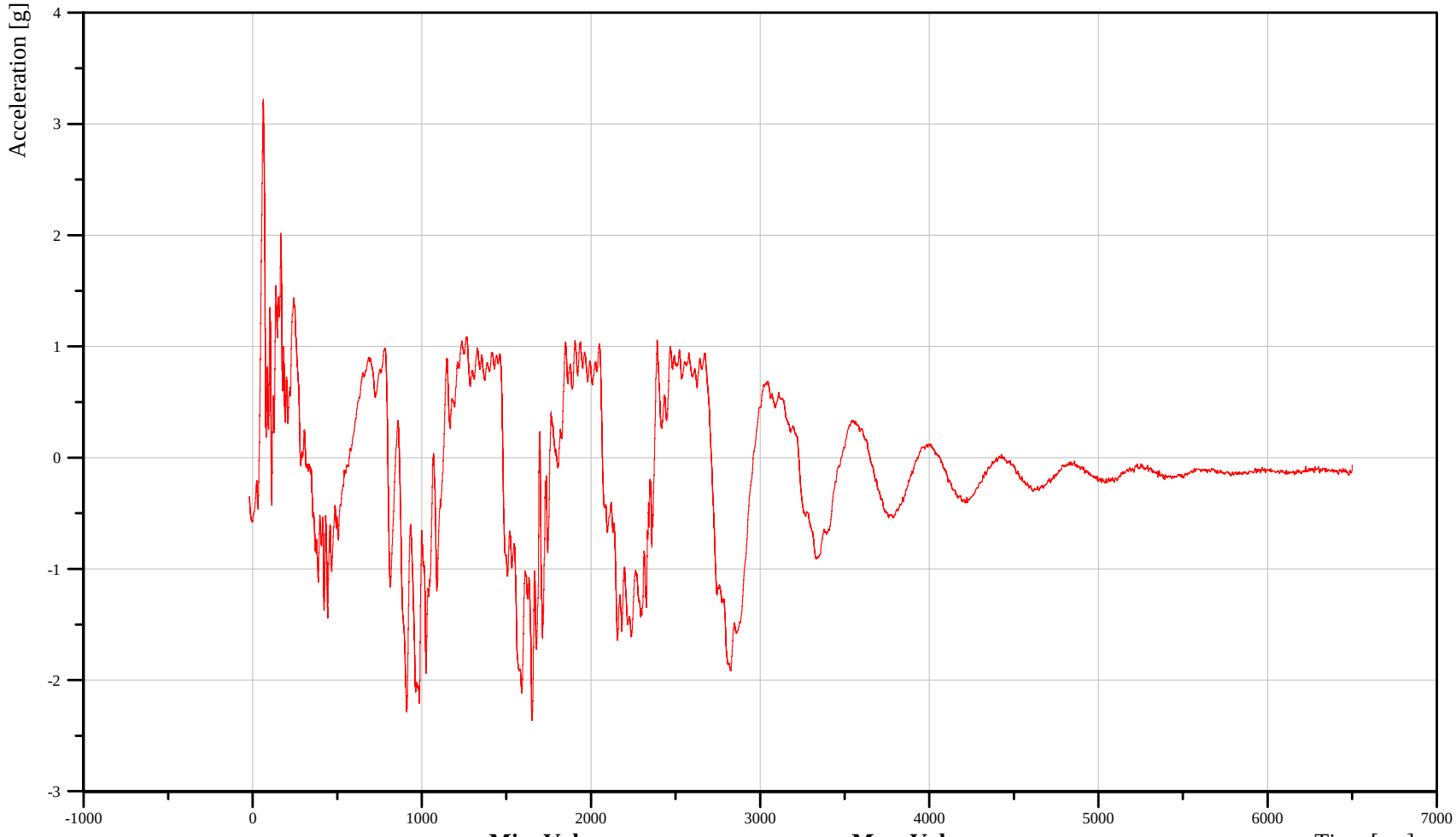
Bottom of Engine Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNBO0000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2.36 g at 1,650.48 ms

Max. Value
3.22 g at 61.68 ms

FMVSS 208 Rollover 2007 Ford Expedition

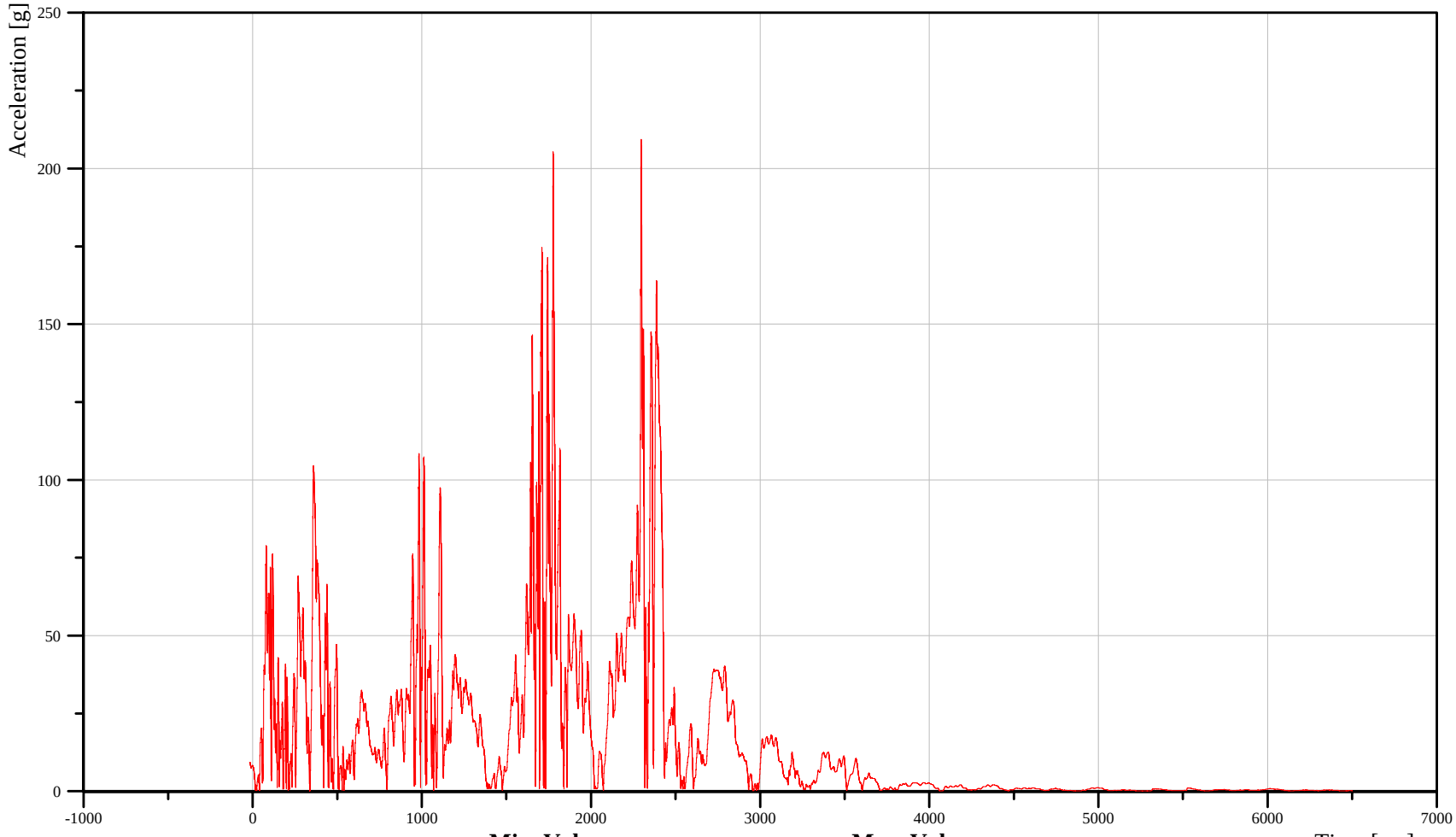
Bottom of Engine Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10ENGNBO0000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.08 g at 5,260.16 ms

Max. Value
209.42 g at 2,296.40 ms

FMVSS 208 Rollover 2007 Ford Expedition

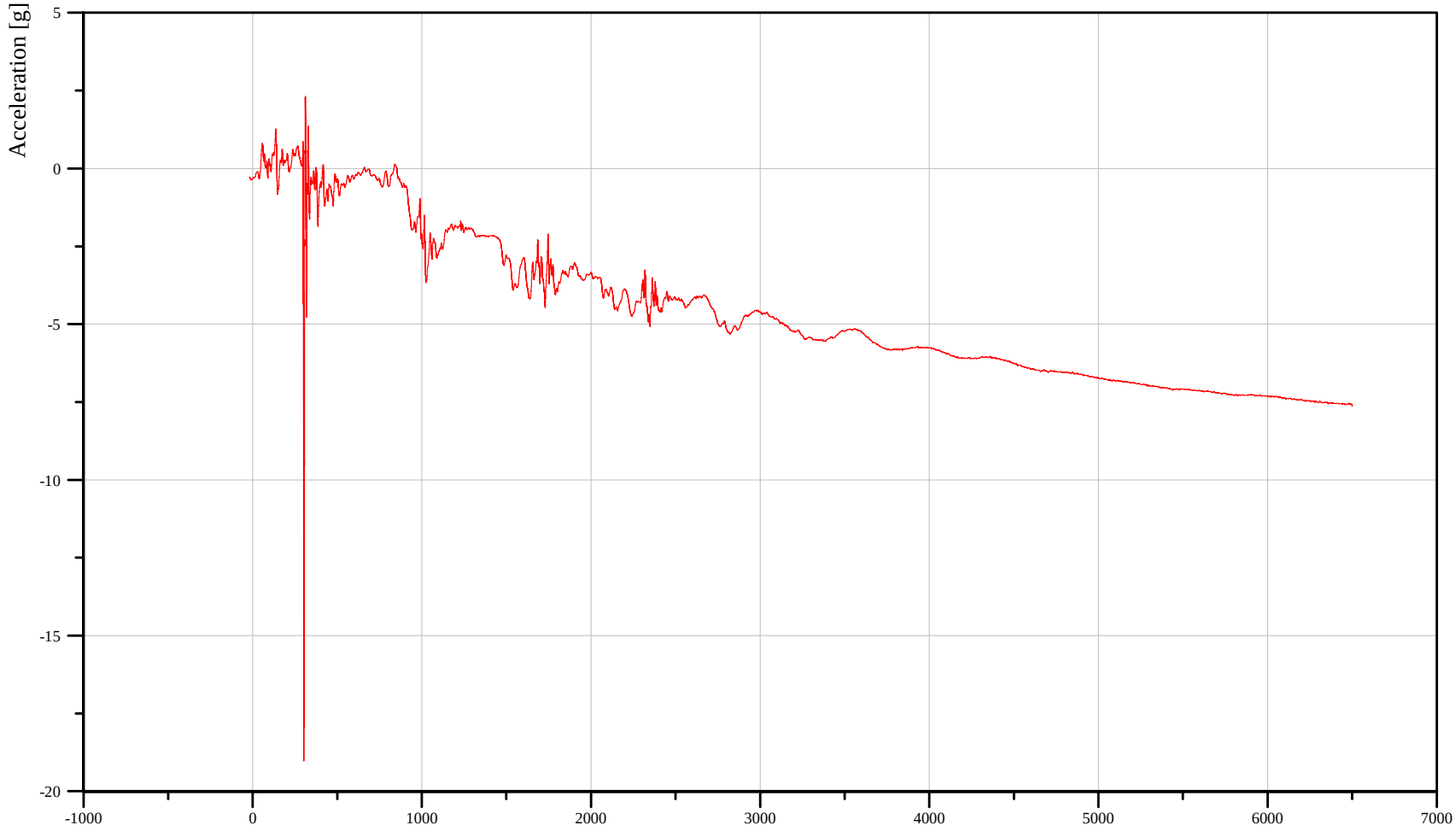
Left A-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-19.03 g at 302.64 ms

Max. Value
2.32 g at 310.88 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

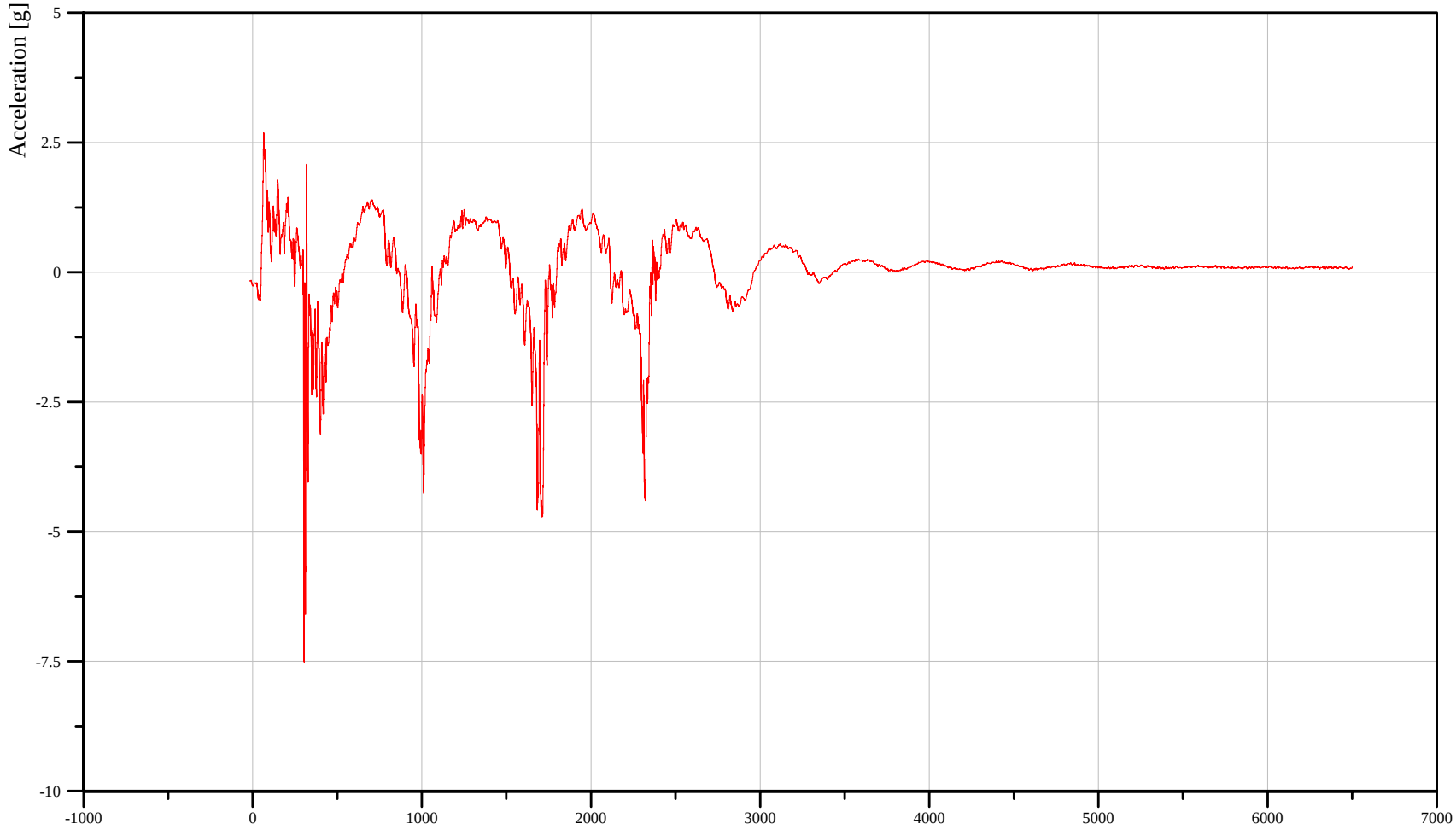
Left A-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-7.53 g at 303.52 ms

Max. Value
2.68 g at 64.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

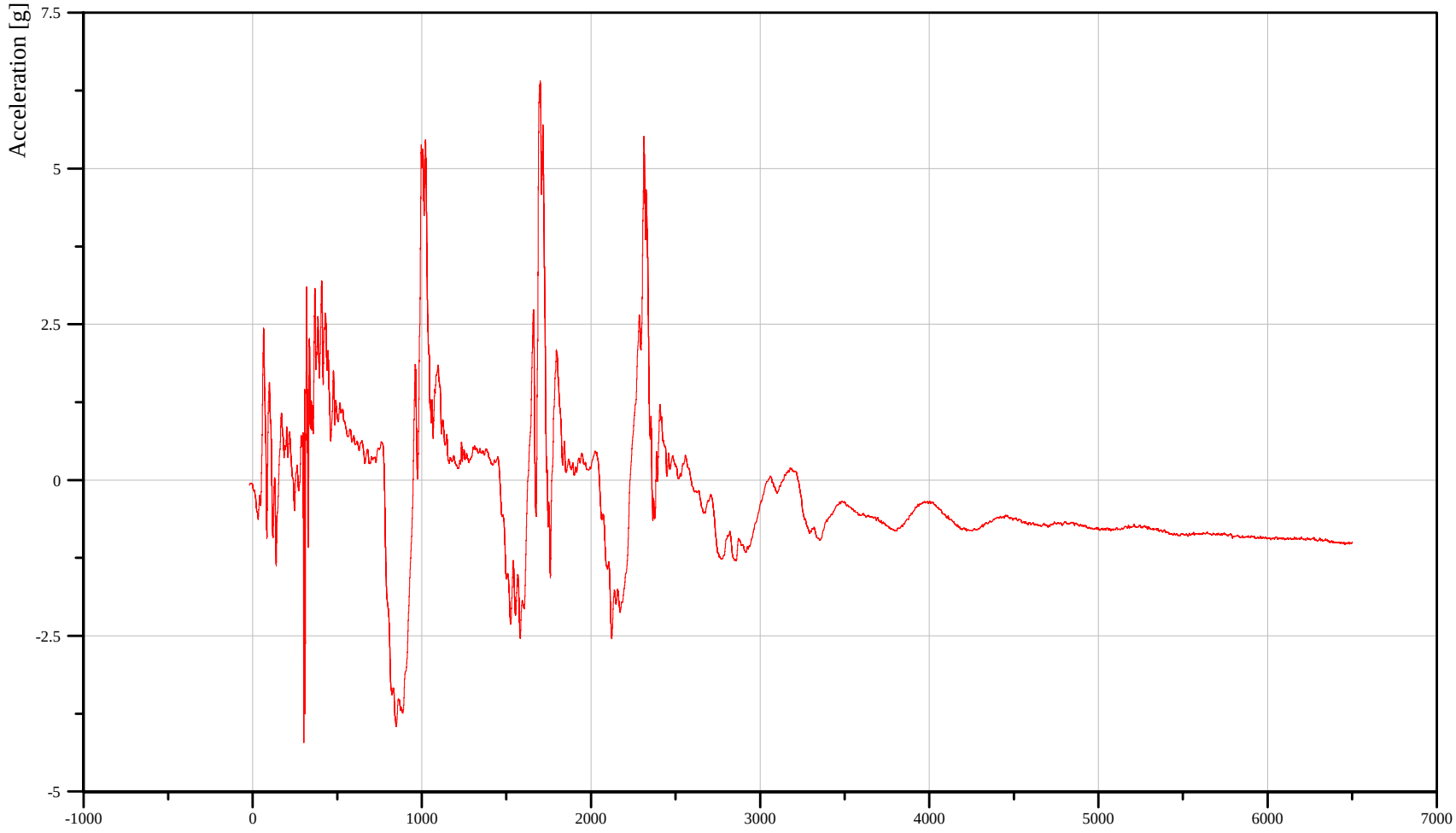
Left A-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.21 g at 302.48 ms

Max. Value
6.41 g at 1,699.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

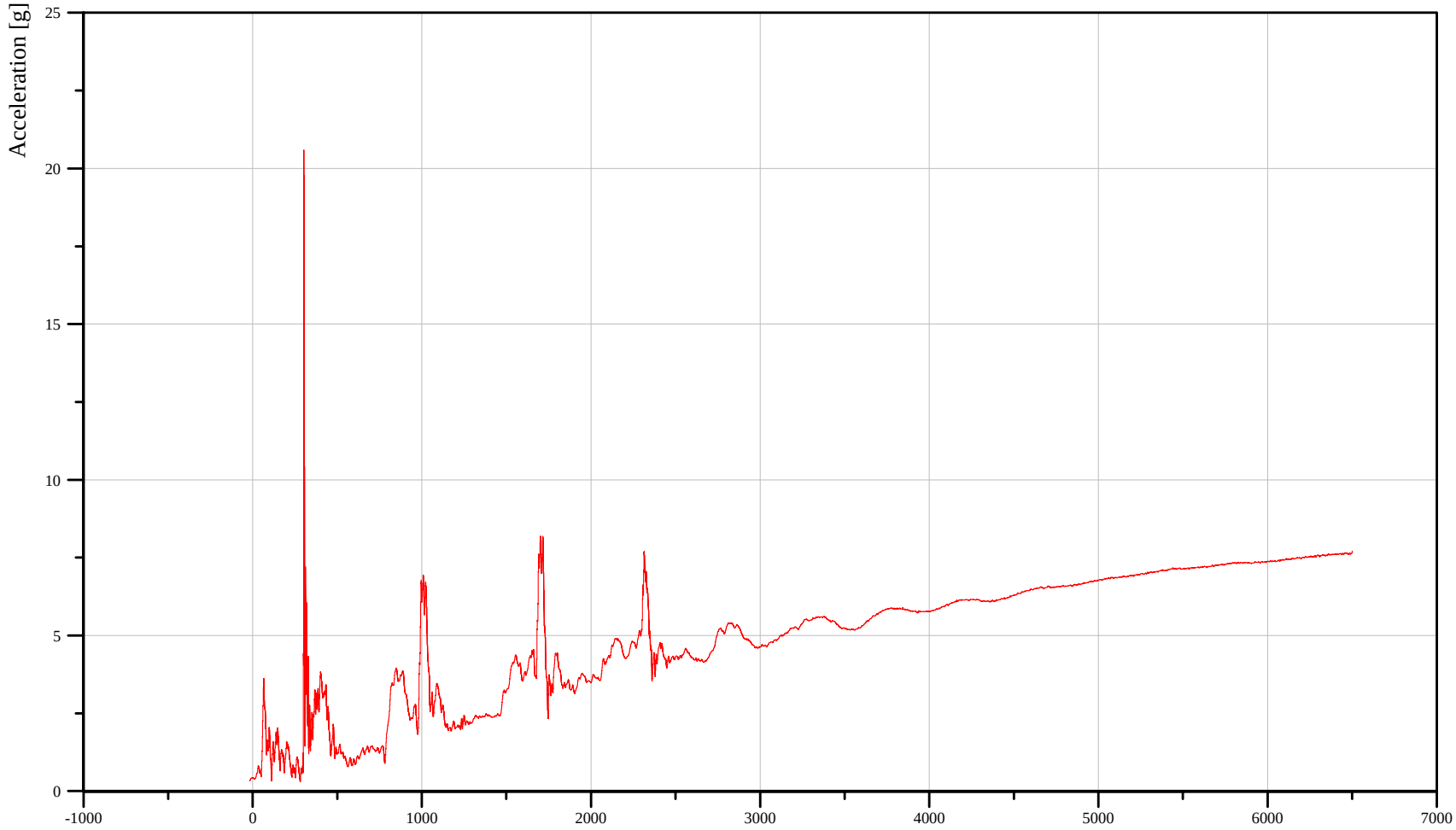
Left A-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.30 g at 280.40 ms

Max. Value
20.60 g at 302.72 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

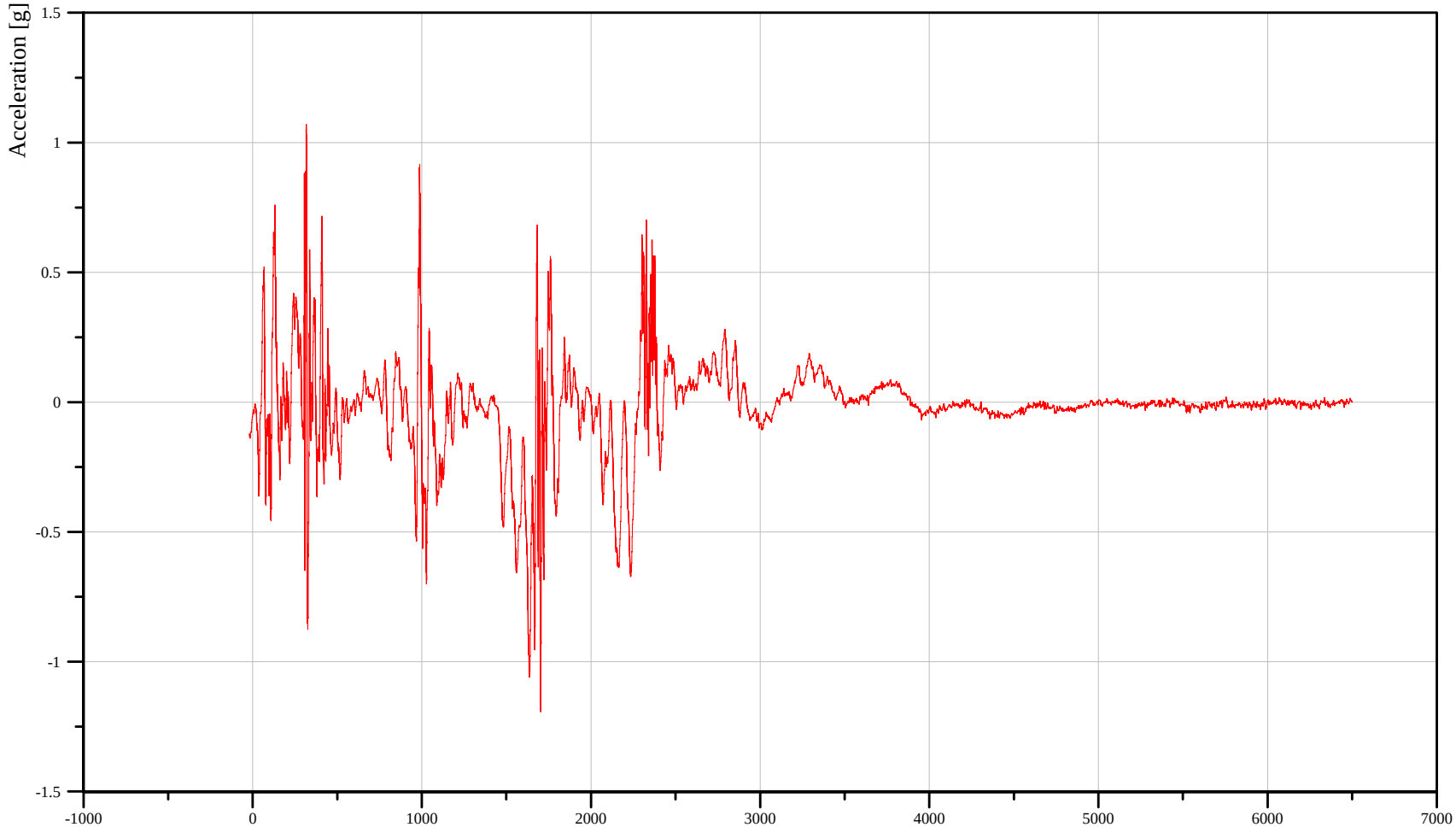
Left A-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLOLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.19 g at 1,702.00 ms

Max. Value
1.07 g at 316.80 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

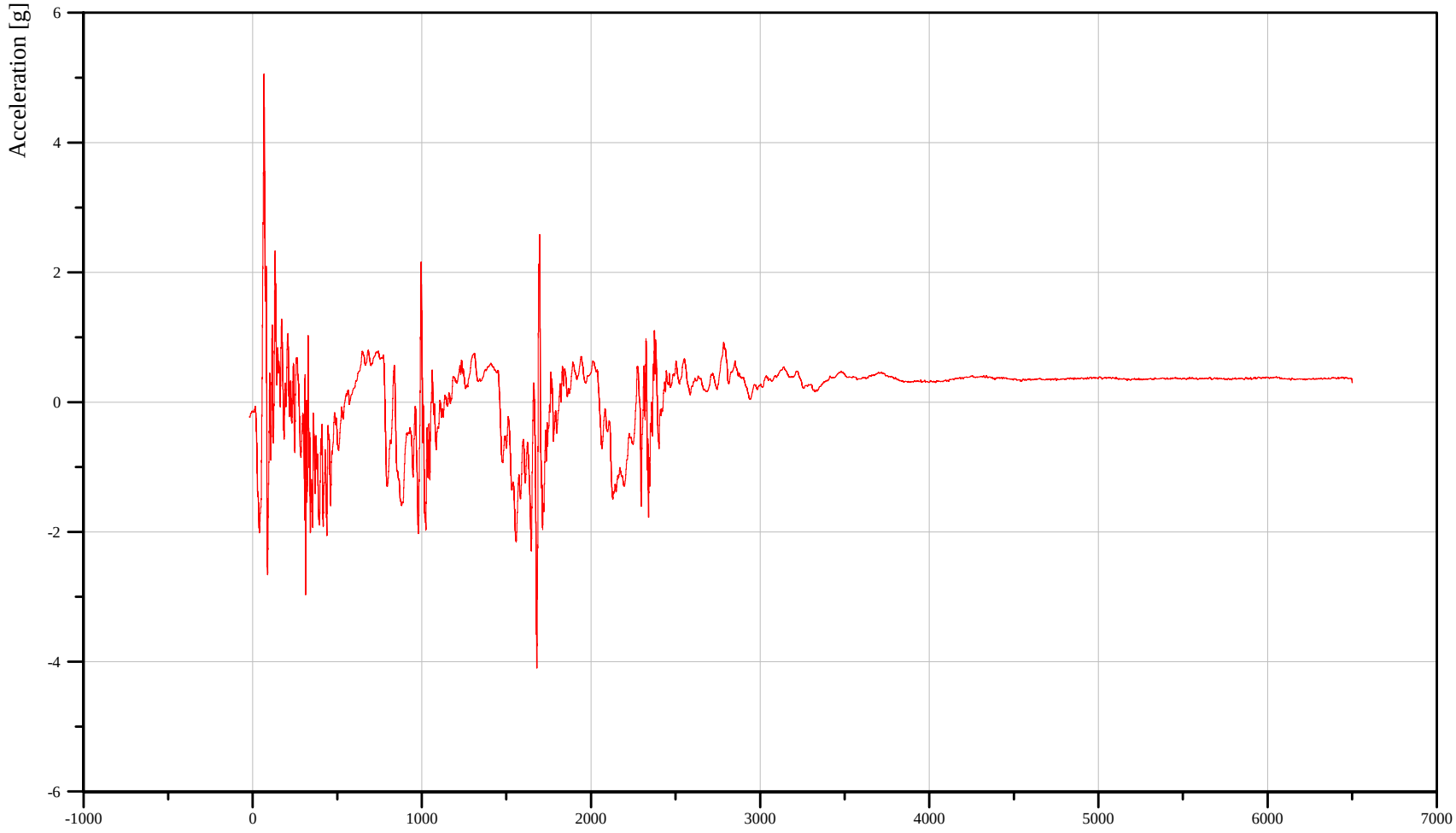
Left A-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLOLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.10 g at 1,679.20 ms

Max. Value
5.06 g at 66.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

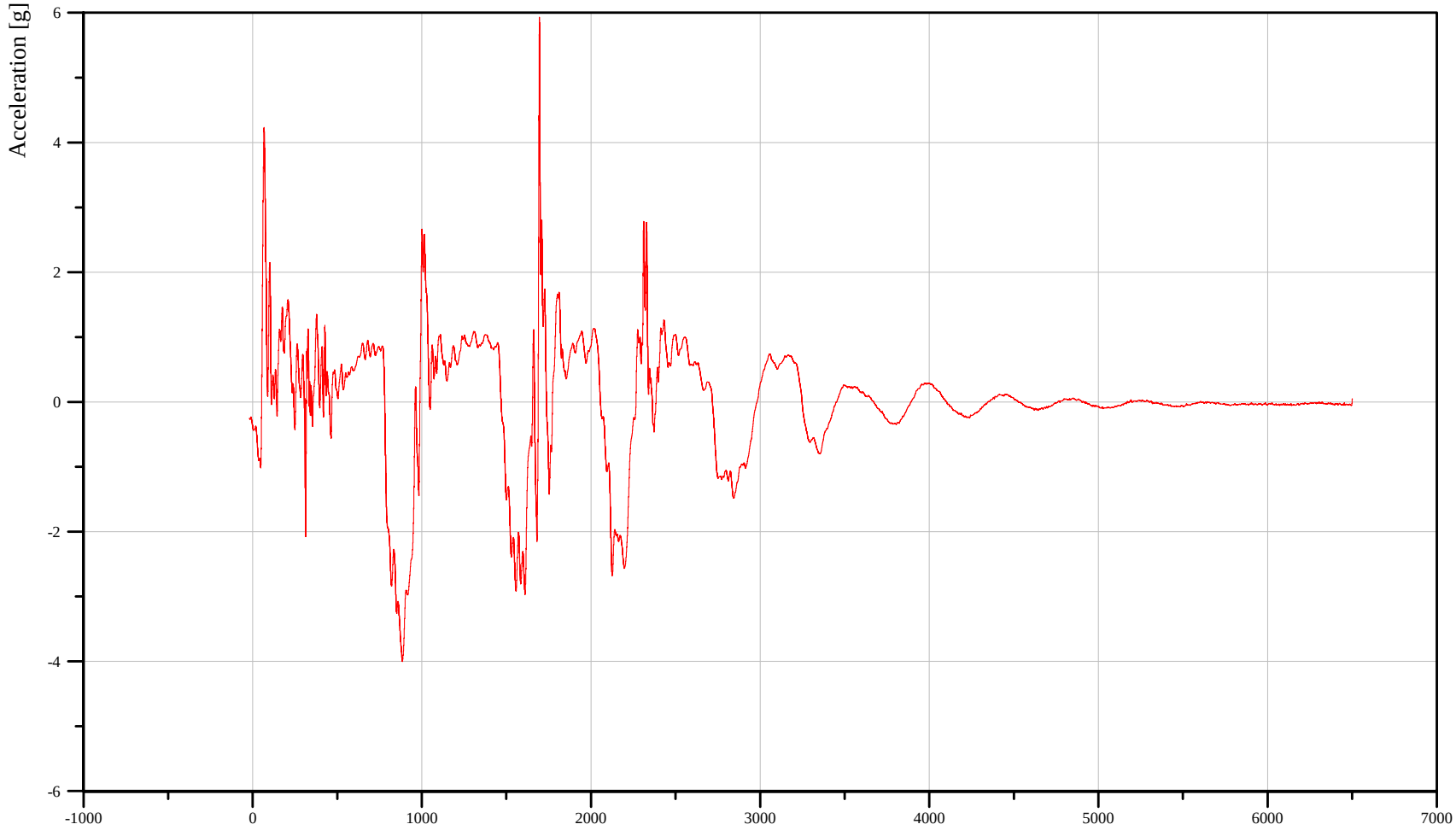
Left A-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLOLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.01 g at 884.40 ms

Max. Value
5.93 g at 1,694.64 ms

FMVSS 208 Rollover 2007 Ford Expedition

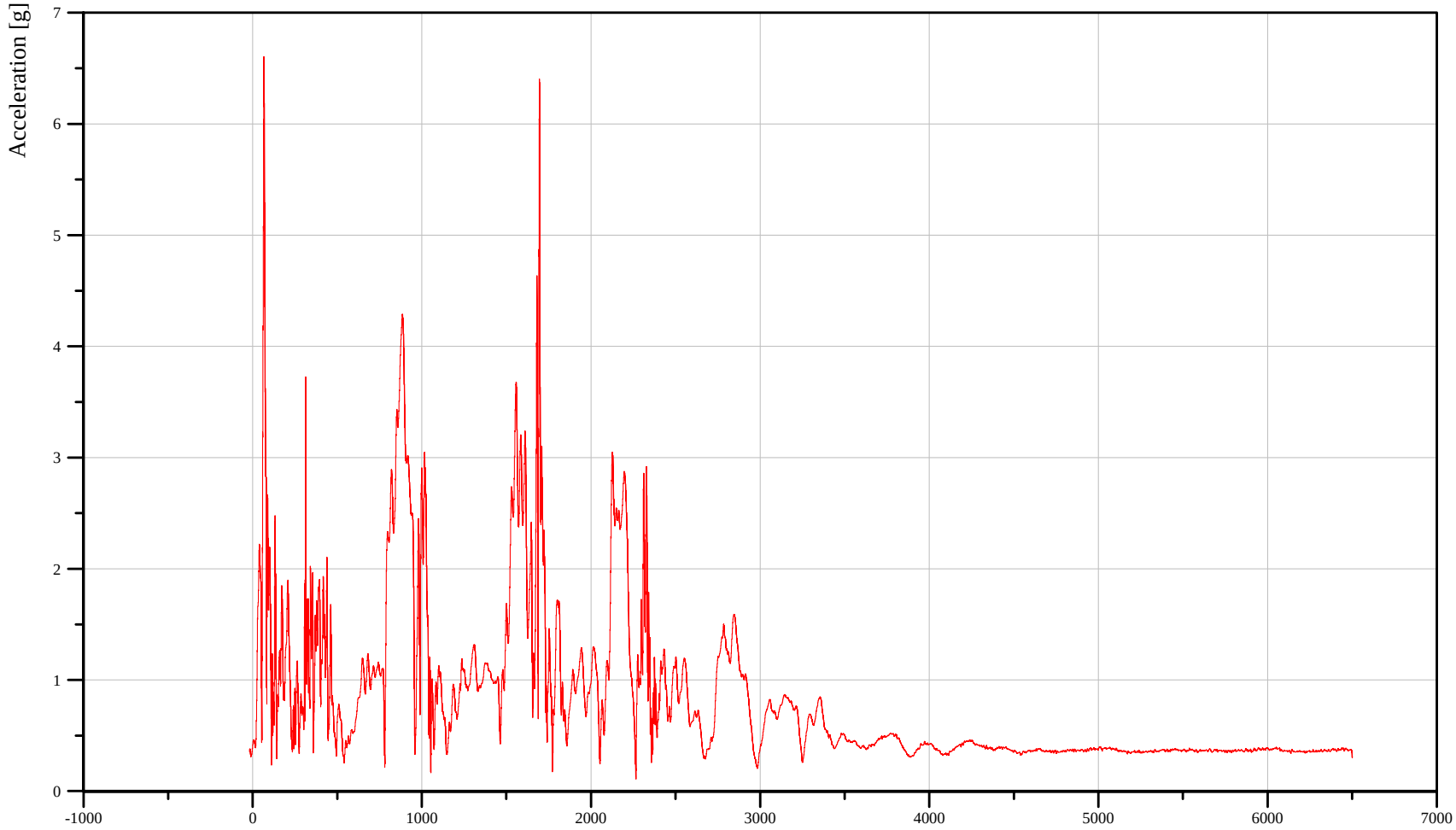
Left A-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLOLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.11 g at 2,265.28 ms

Max. Value
6.61 g at 66.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

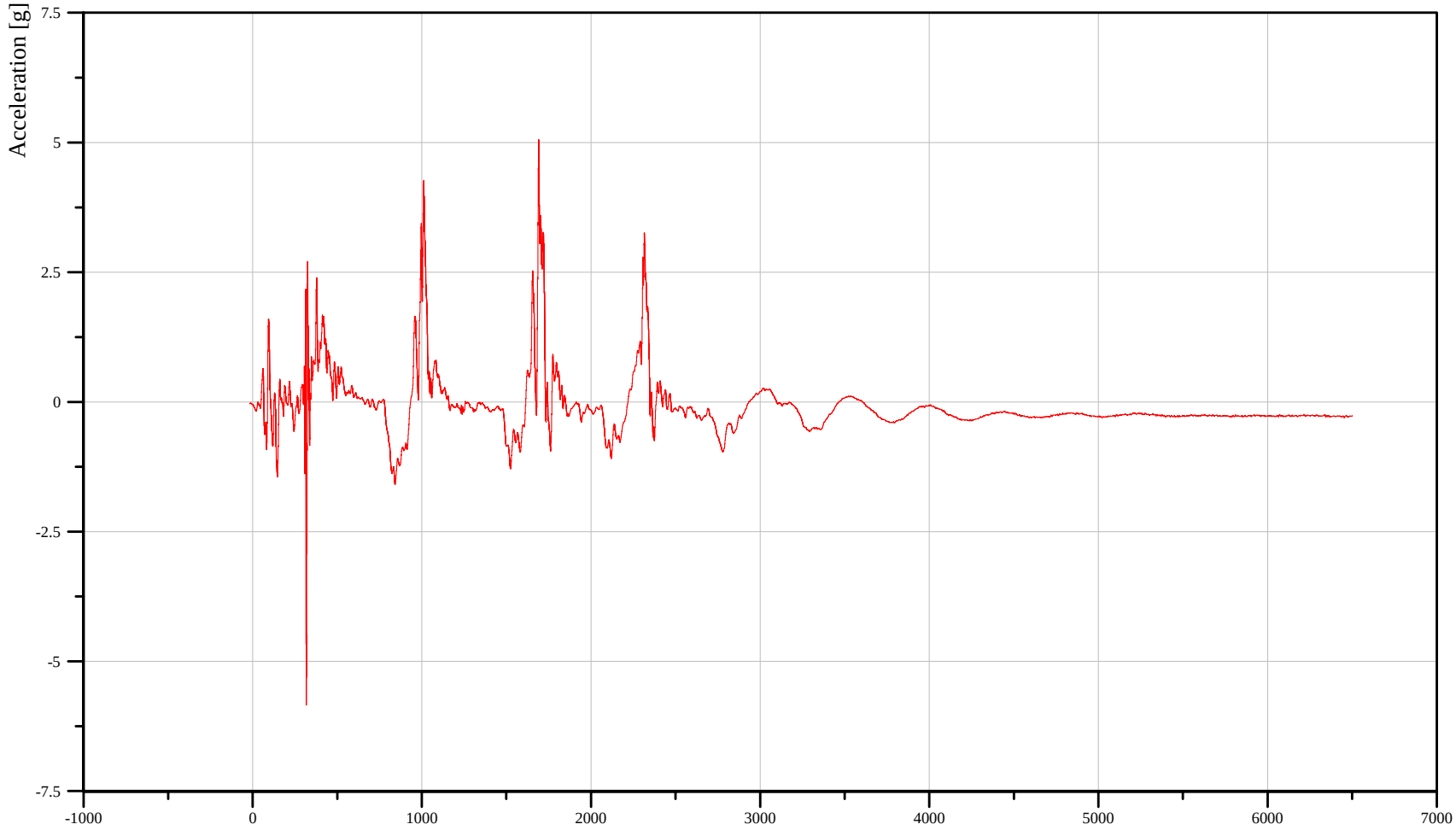
Right A-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPRI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-5.84 g at 316.88 ms

Max. Value
5.06 g at 1,690.08 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

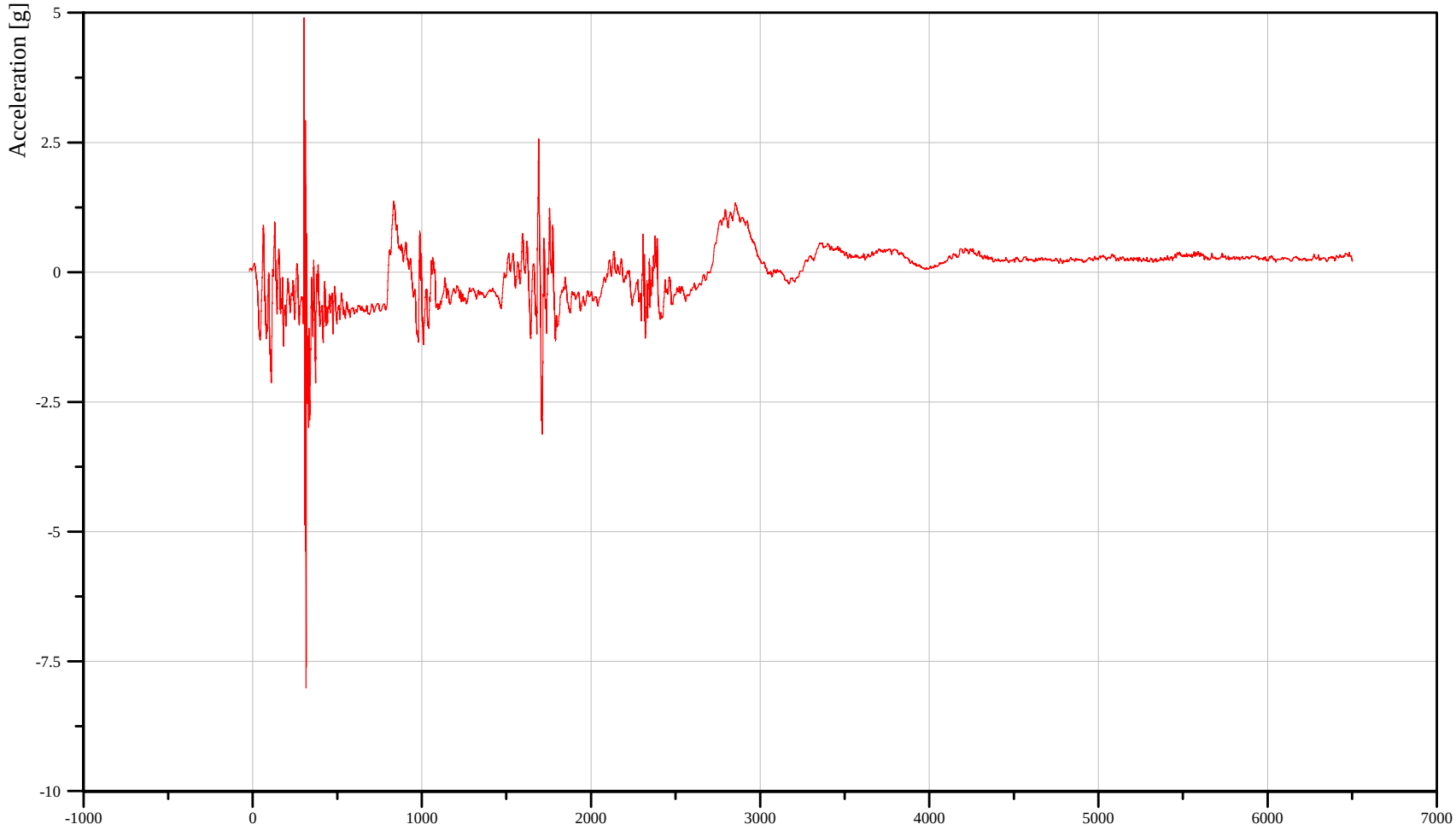
Right A-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPRI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-8.01 g at 315.36 ms

Max. Value
4.91 g at 303.28 ms

FMVSS 208 Rollover 2007 Ford Expedition

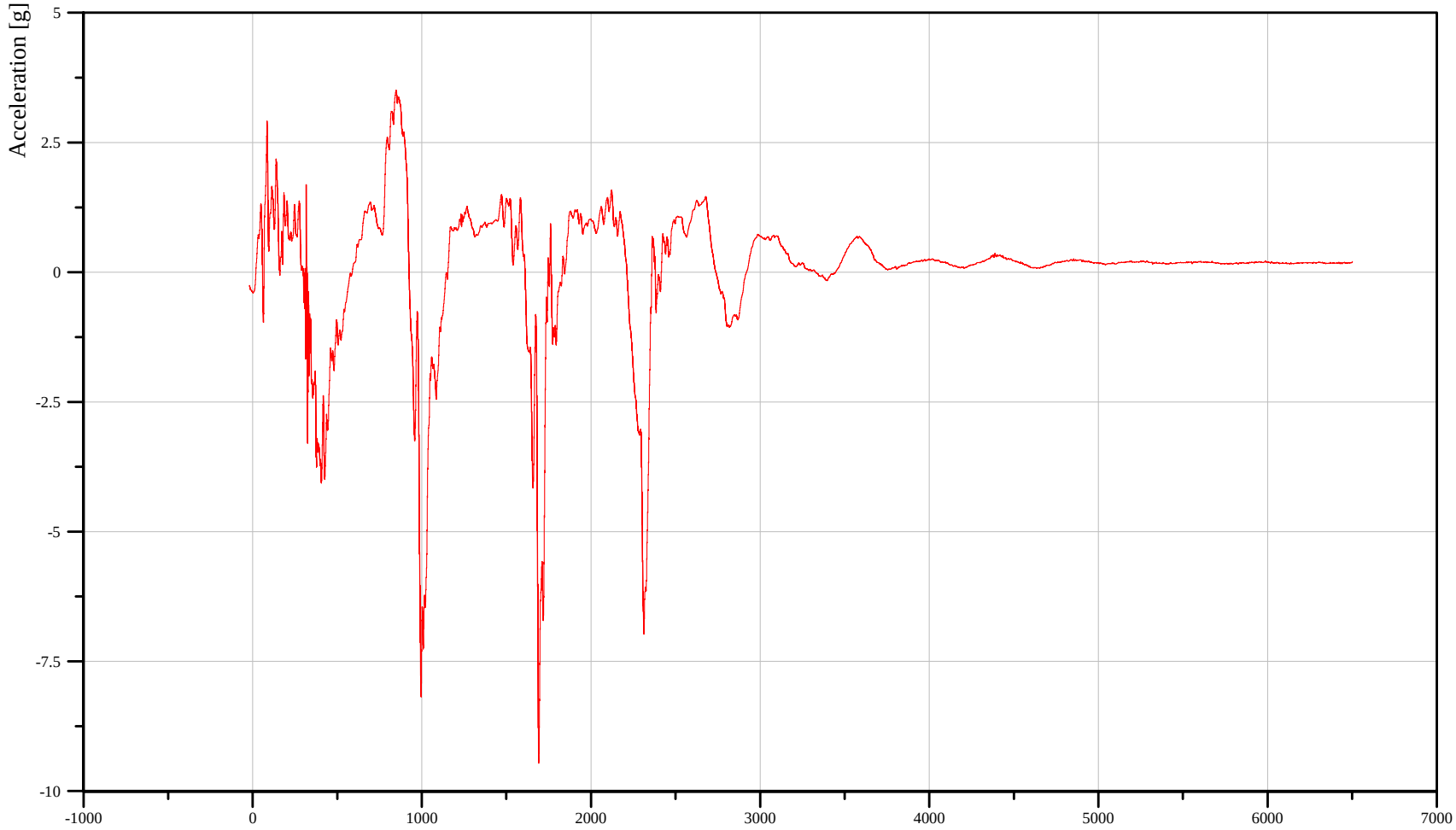
Right A-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPRI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-9.46 g at 1,690.32 ms

Max. Value
3.50 g at 847.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

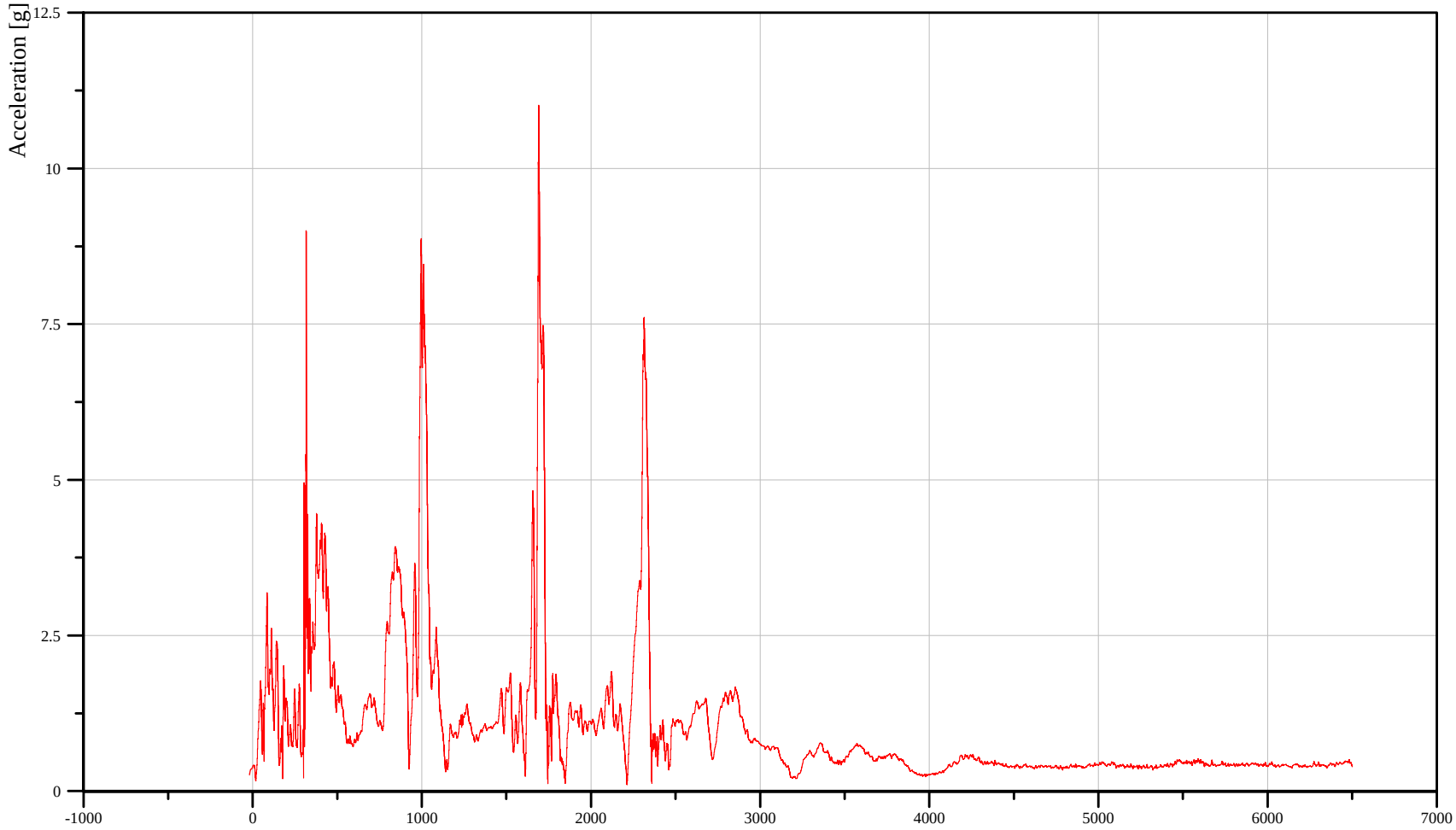
Right A-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILUPRI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.10 g at 2,212.56 ms

Max. Value
11.02 g at 1,690.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

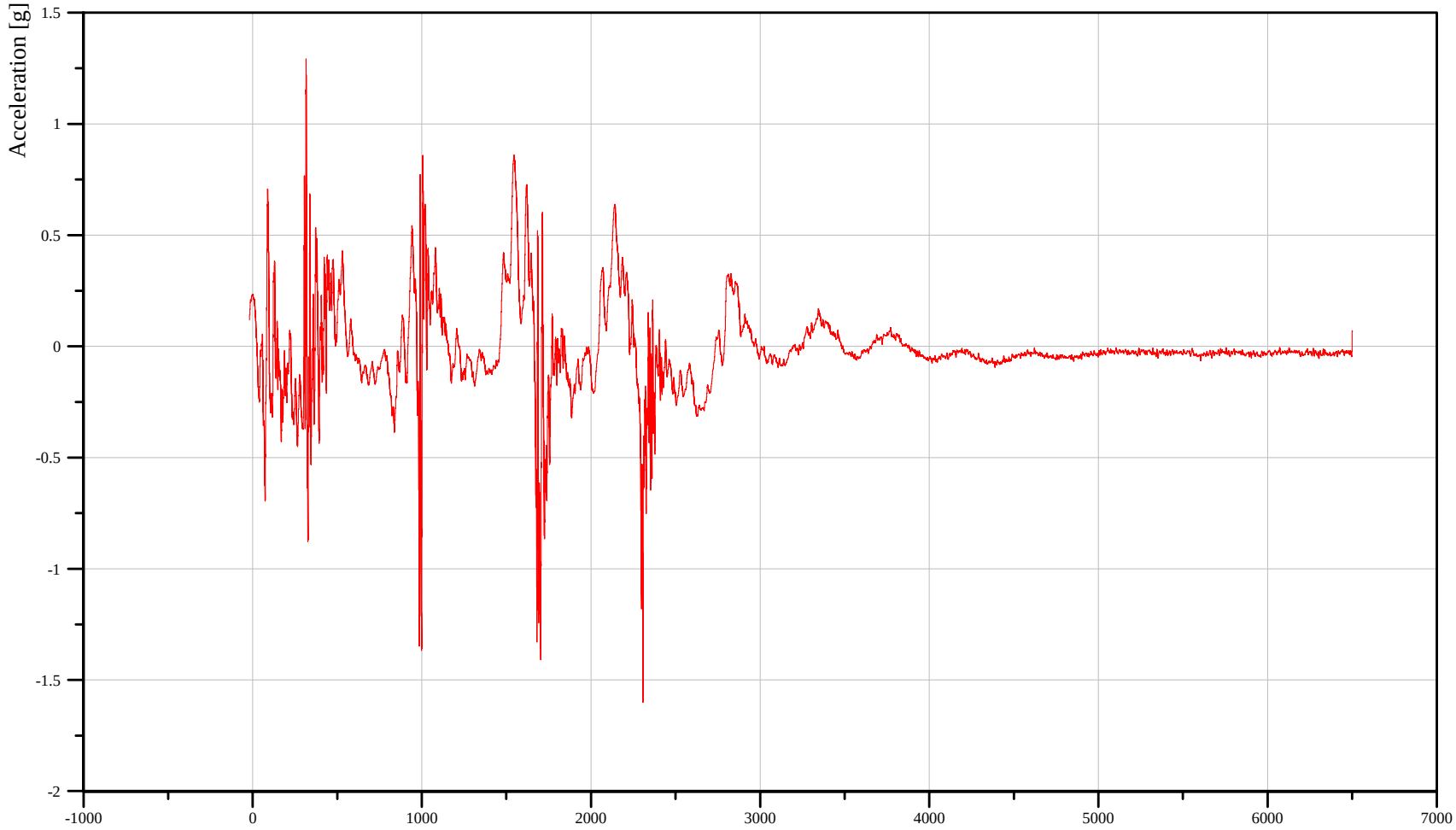
Right A-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLORI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.60 g at 2,306.40 ms

Max. Value
1.29 g at 315.12 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

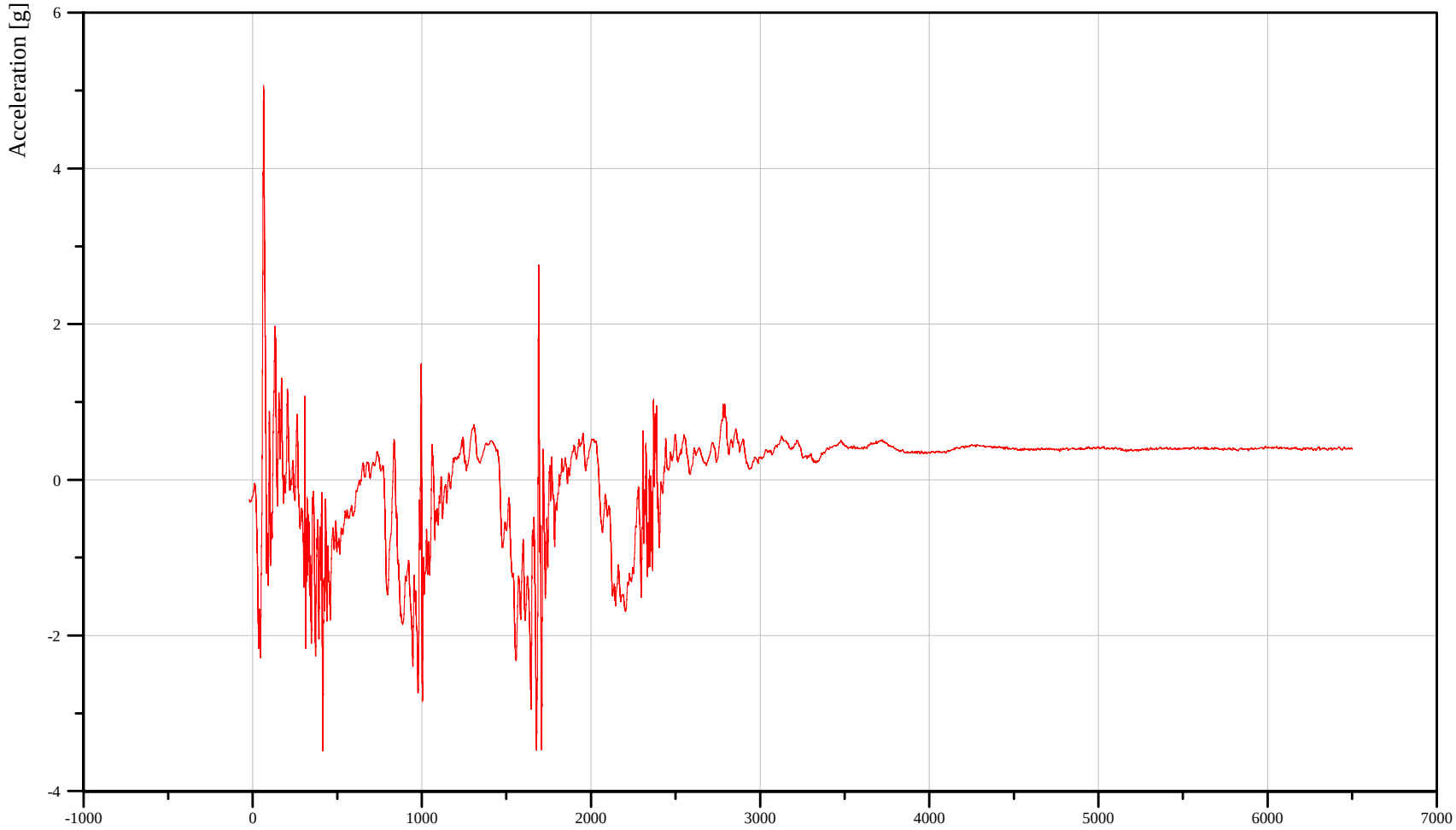
Right A-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLORI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.49 g at 414.16 ms

Max. Value
5.07 g at 63.76 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

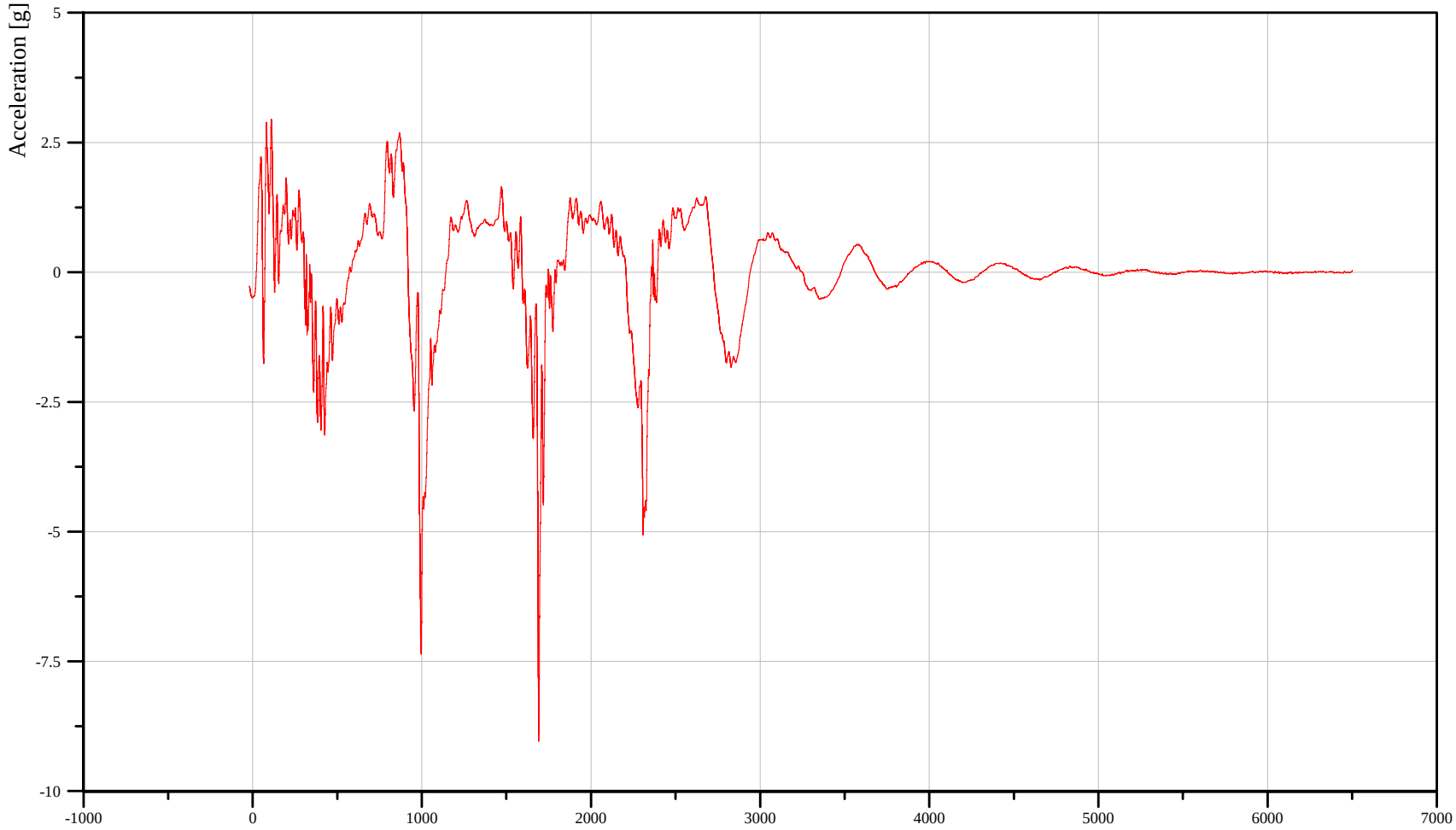
Right A-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLORI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-9.04 g at 1,690.88 ms

Max. Value
2.95 g at 109.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

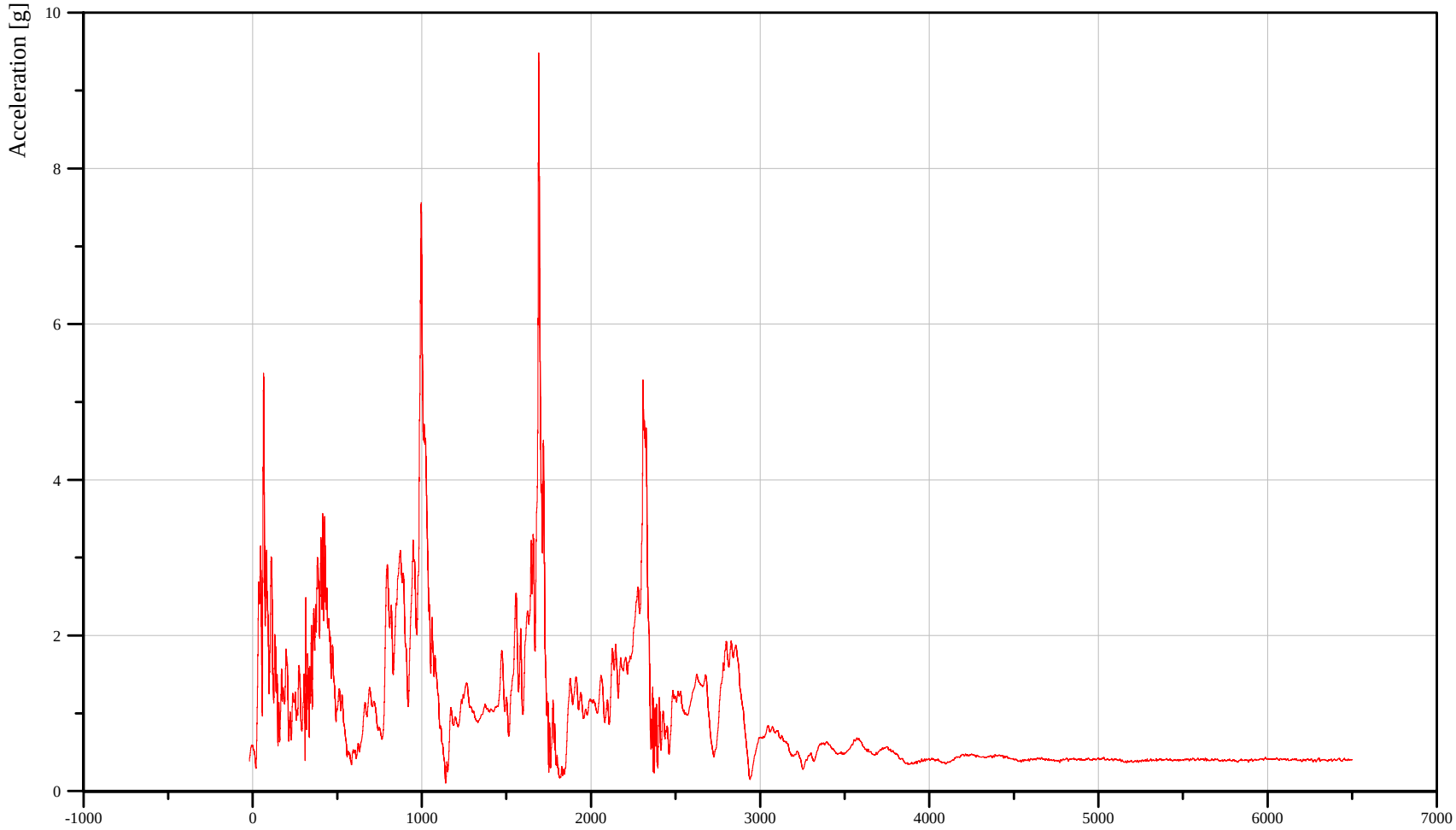
Right A-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10APILLORI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.10 g at 1,140.48 ms

Max. Value
9.48 g at 1,690.56 ms

FMVSS 208 Rollover 2007 Ford Expedition

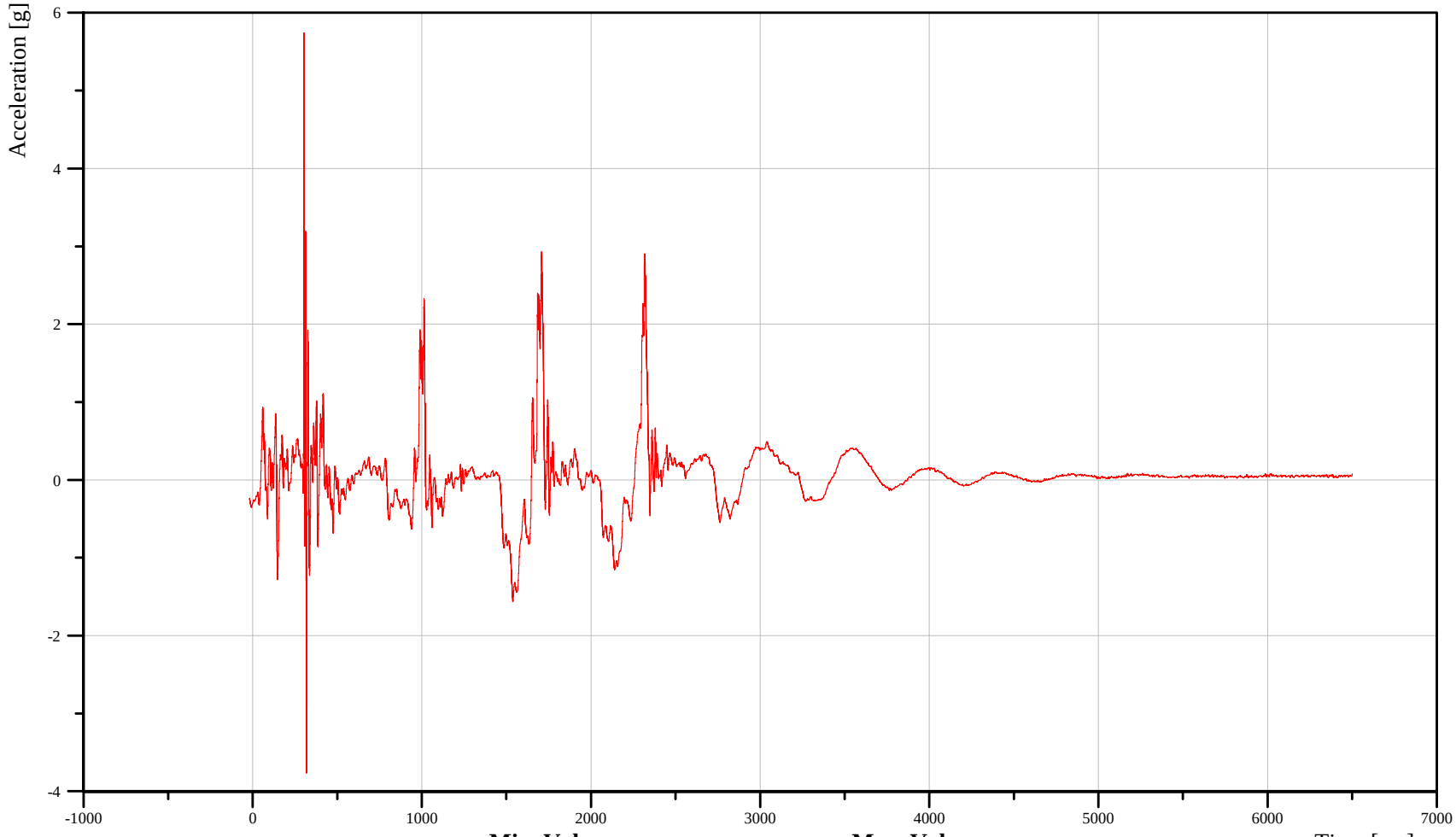
Left B-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.77 g at 318.08 ms

Max. Value
5.74 g at 303.20 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

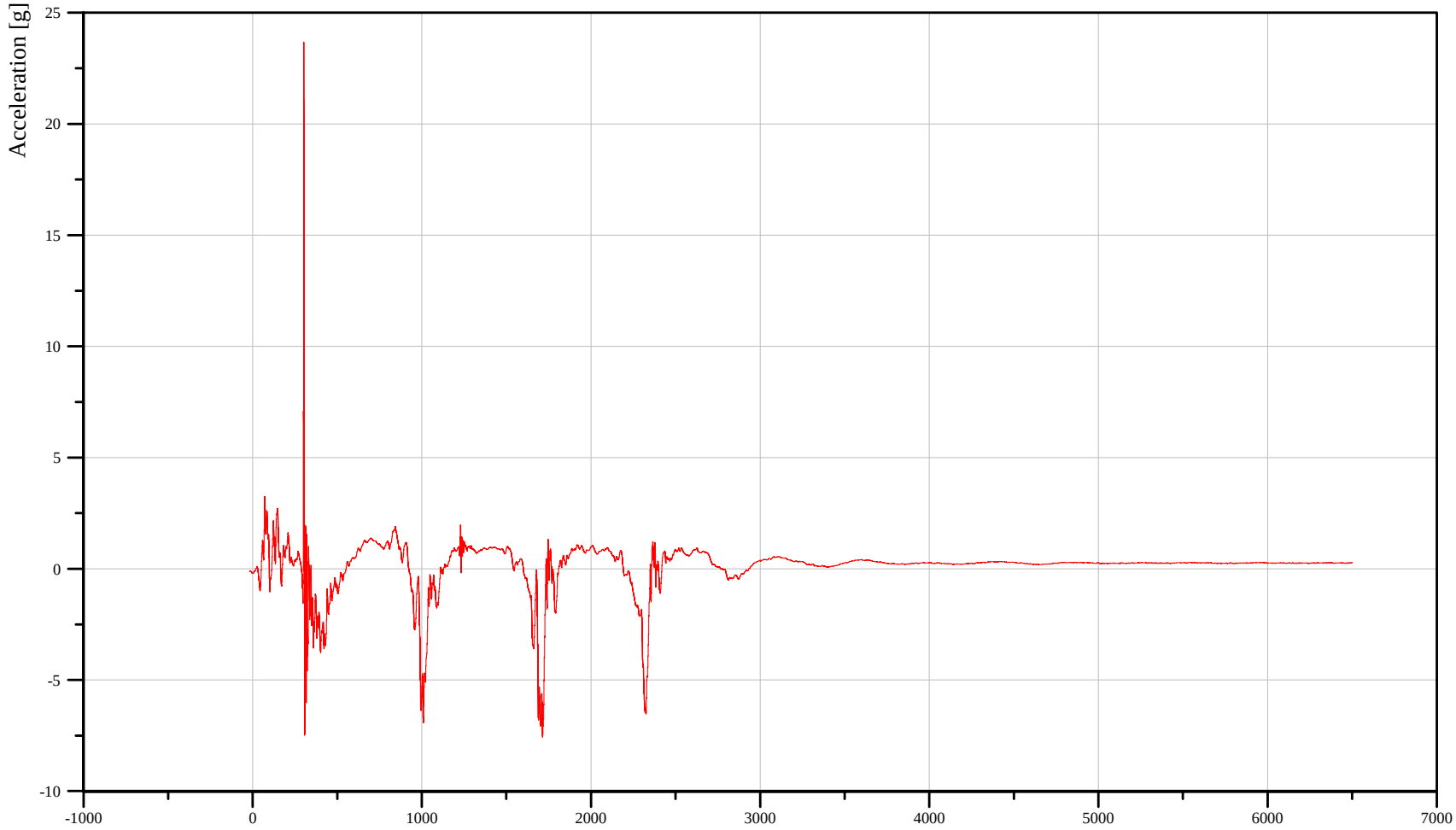
Left B-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-7.58 g at 1,713.84 ms

Max. Value
23.67 g at 302.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

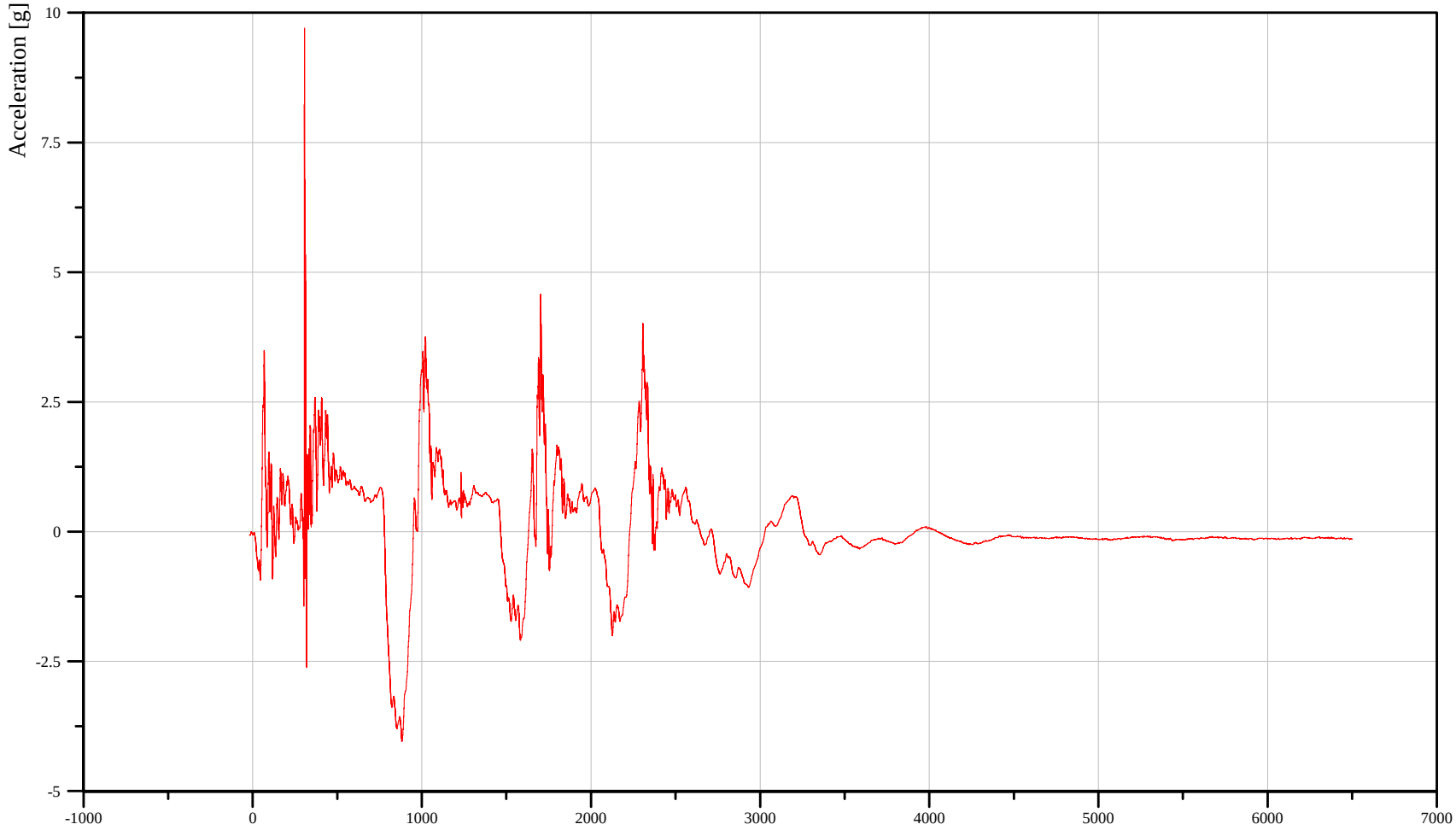
Left B-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.04 g at 882.16 ms

Max. Value
9.70 g at 305.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

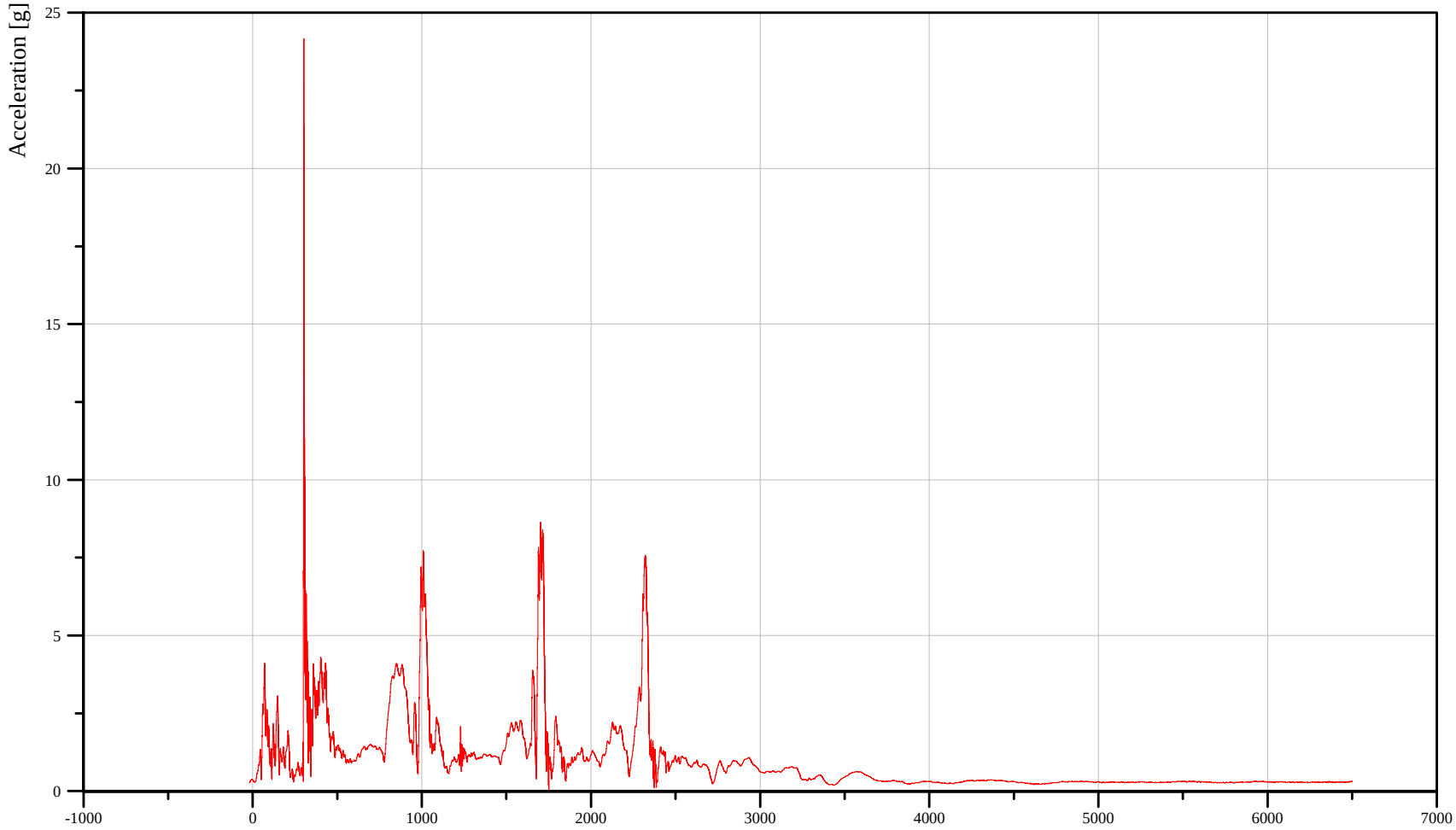
Left B-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.05 g at 1,749.44 ms

Max. Value
24.16 g at 302.24 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

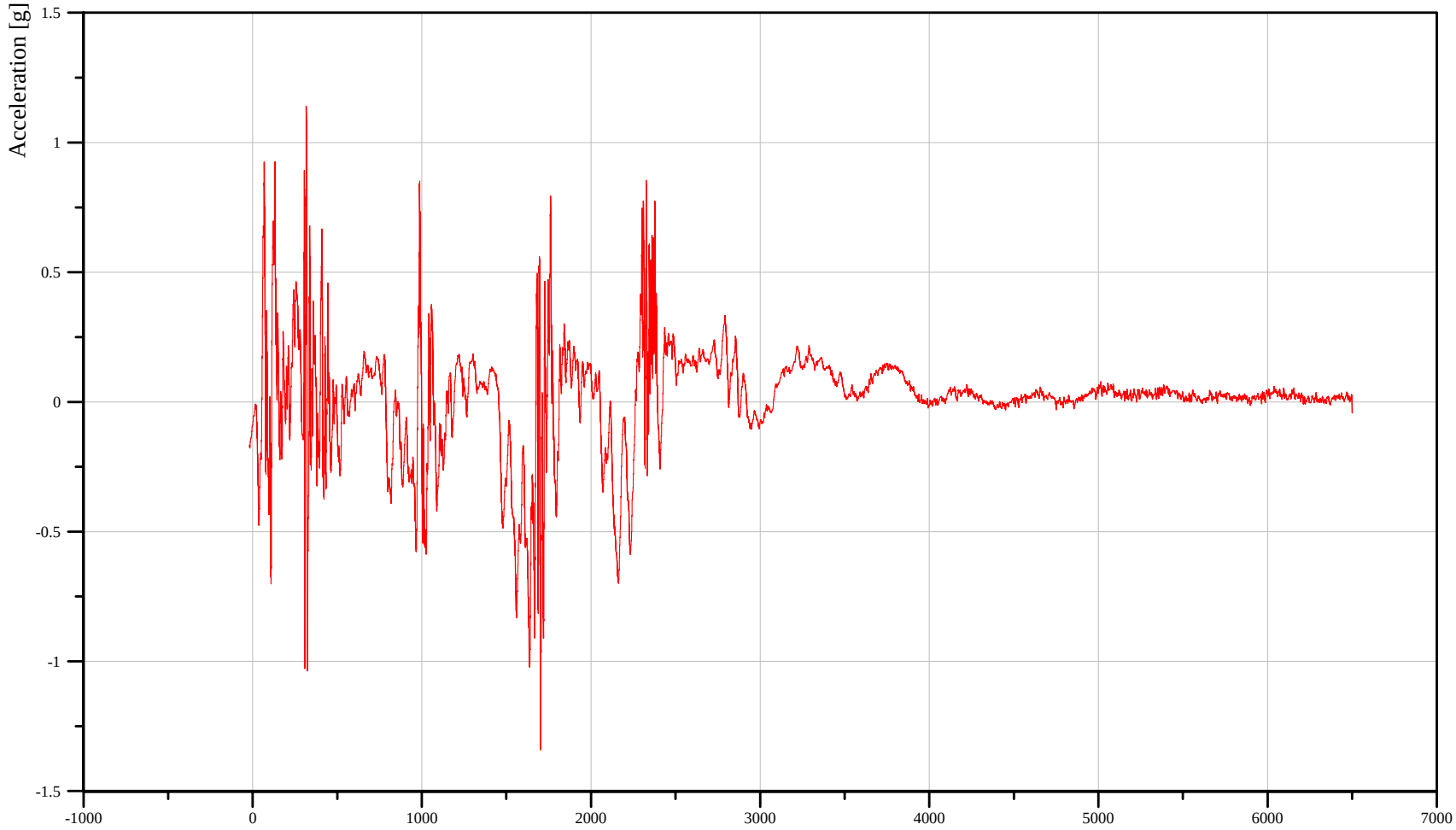
Left B-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLOLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.34 g at 1,702.00 ms

Max. Value
1.14 g at 315.76 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

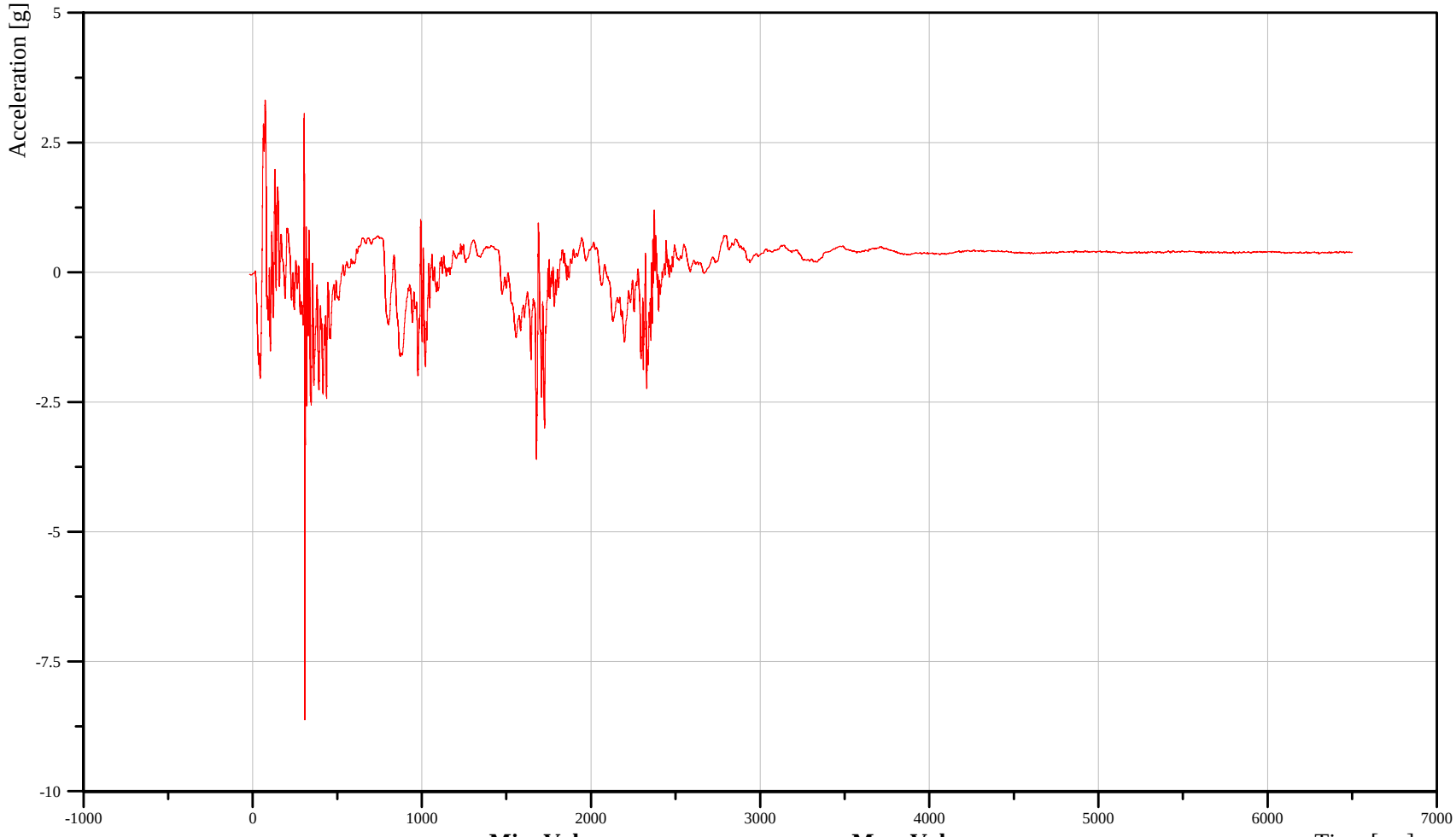
Left B-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLOLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-8.62 g at 308.56 ms

Max. Value
3.32 g at 73.12 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

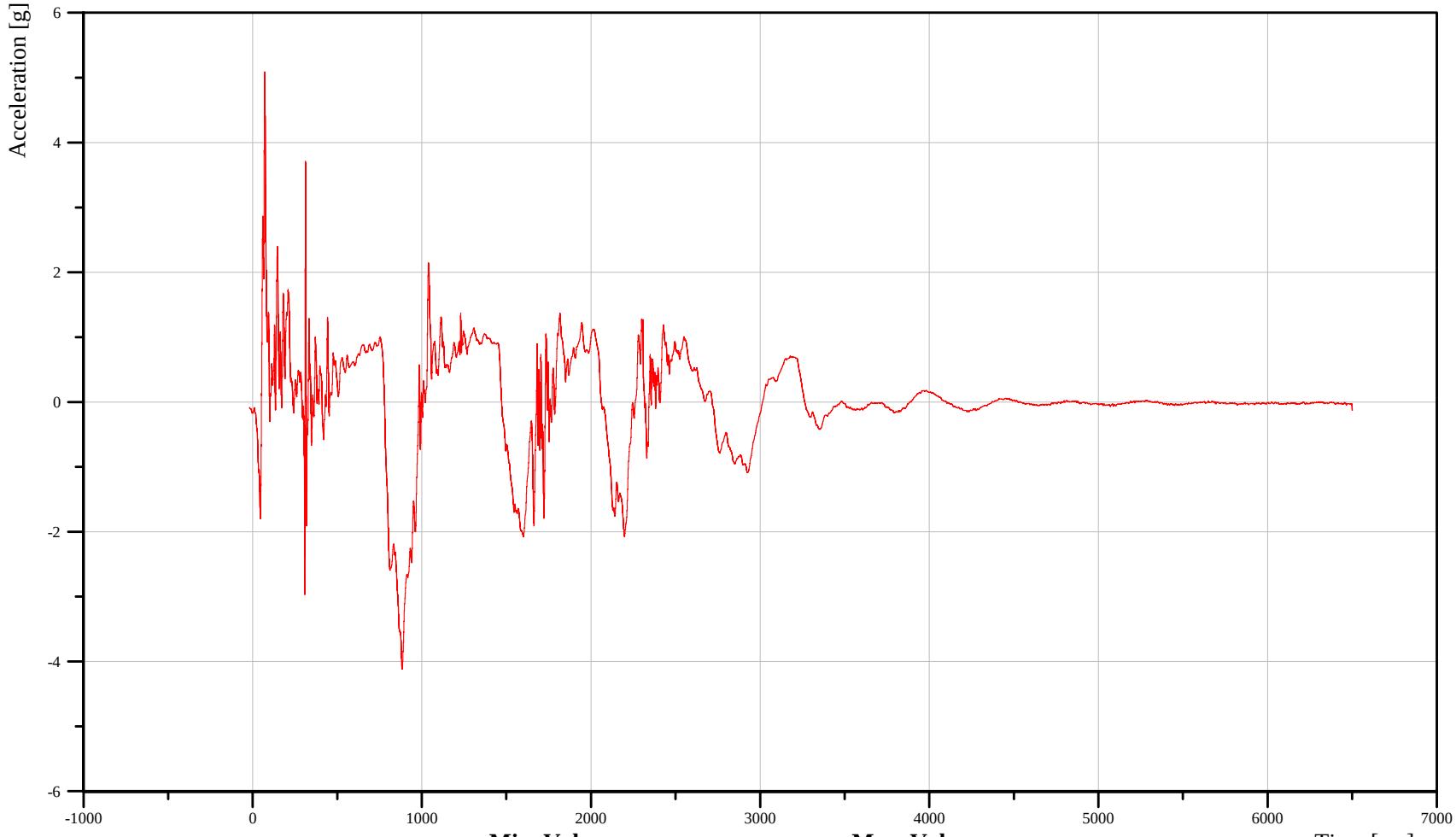
Left B-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLOLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.12 g at 883.68 ms

Max. Value
5.09 g at 71.04 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

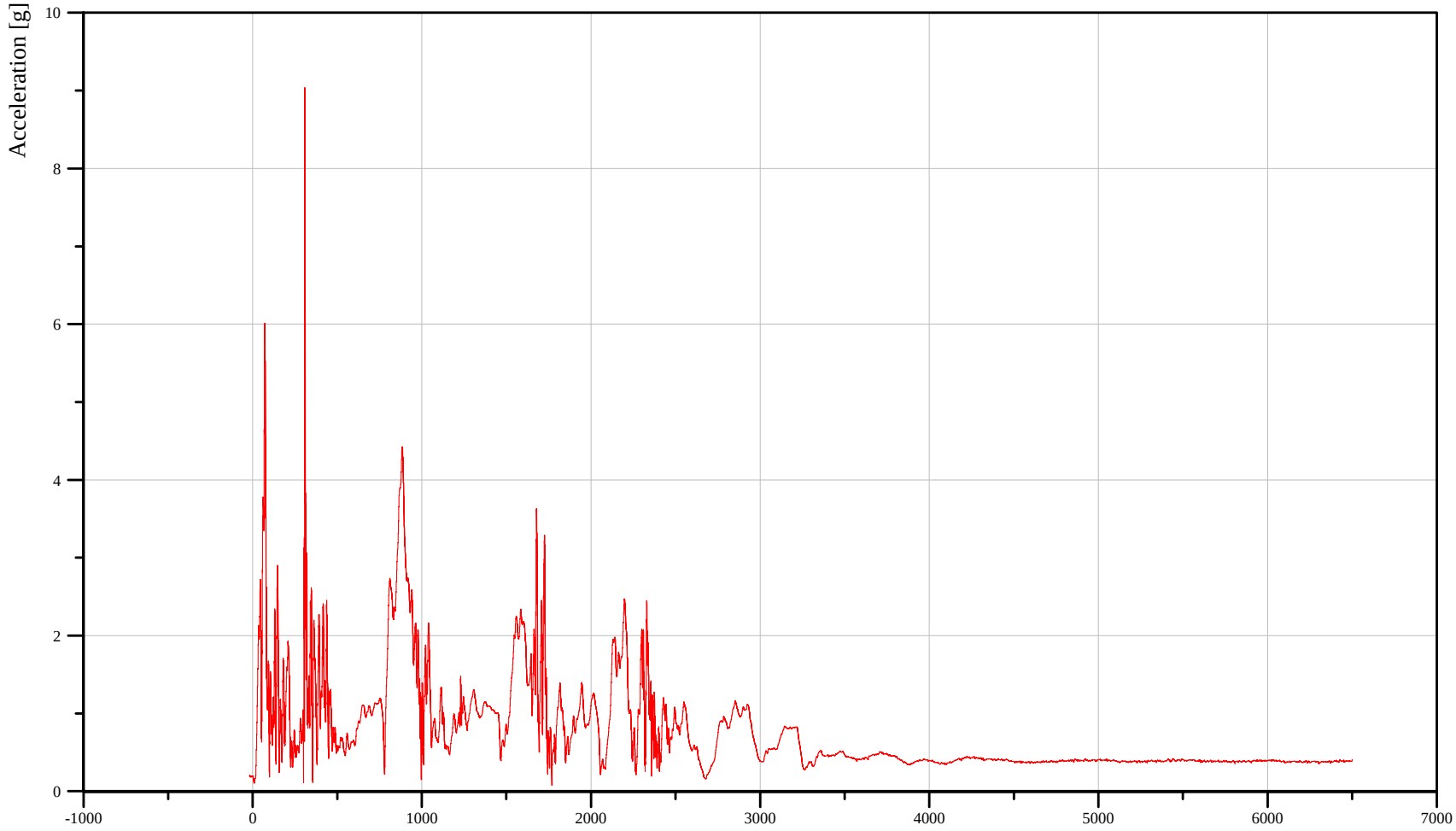
Left B-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLOLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.08 g at 1,768.96 ms

Max. Value
9.04 g at 308.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

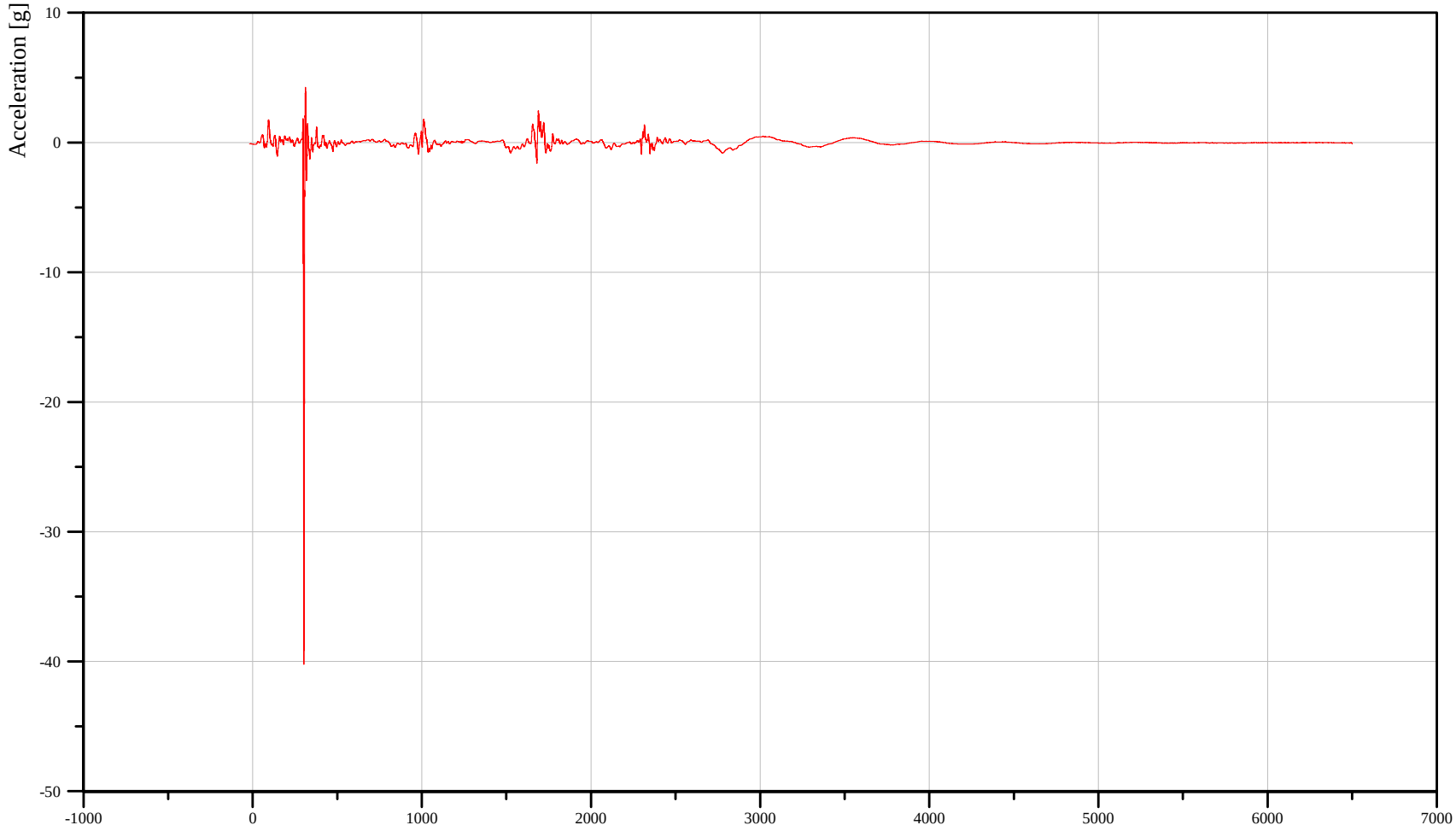
Right B-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPRI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-40.24 g at 302.88 ms

Max. Value
4.26 g at 311.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

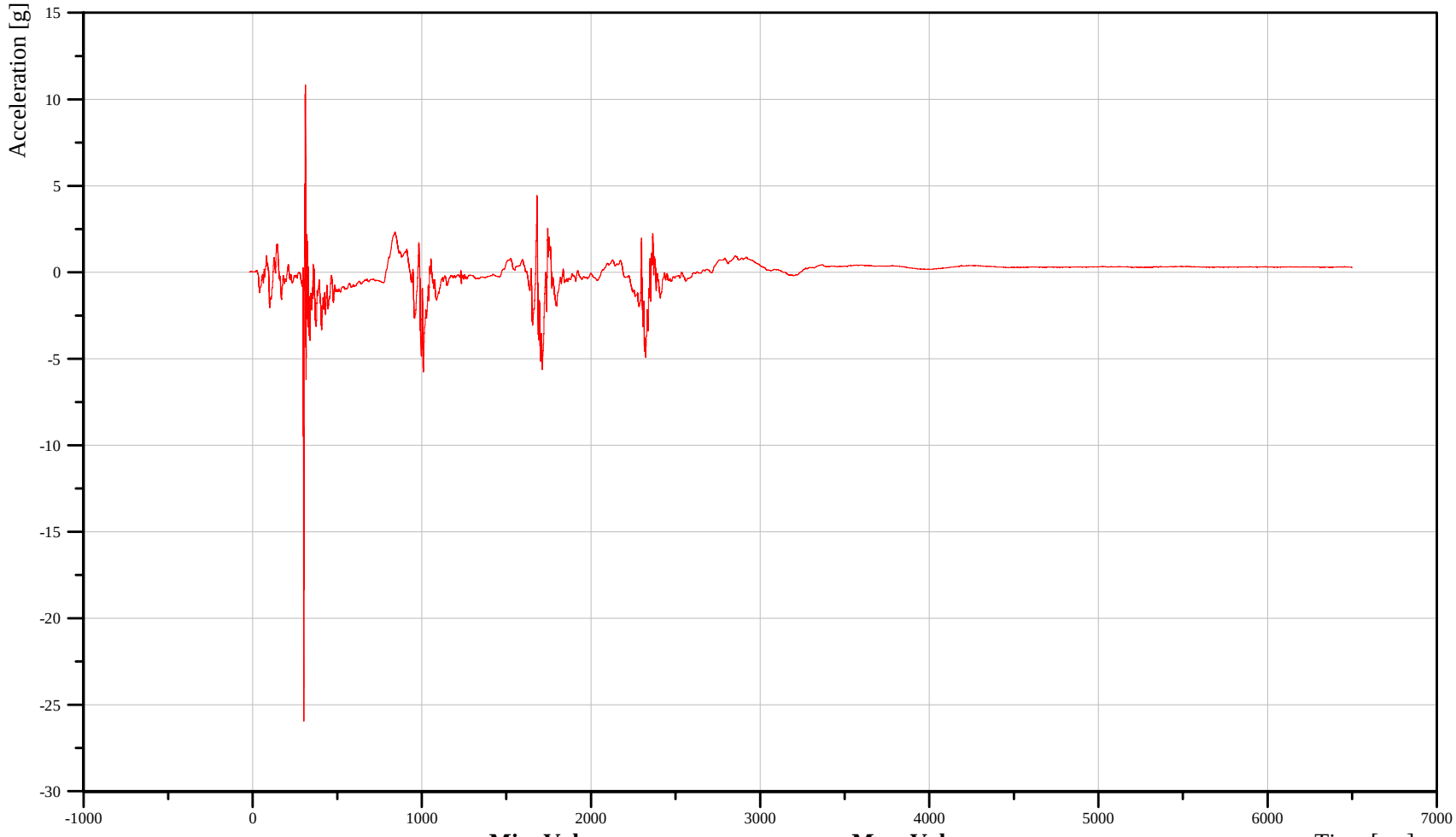
Right B-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPRI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-25.94 g at 302.08 ms

Max. Value
10.85 g at 310.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

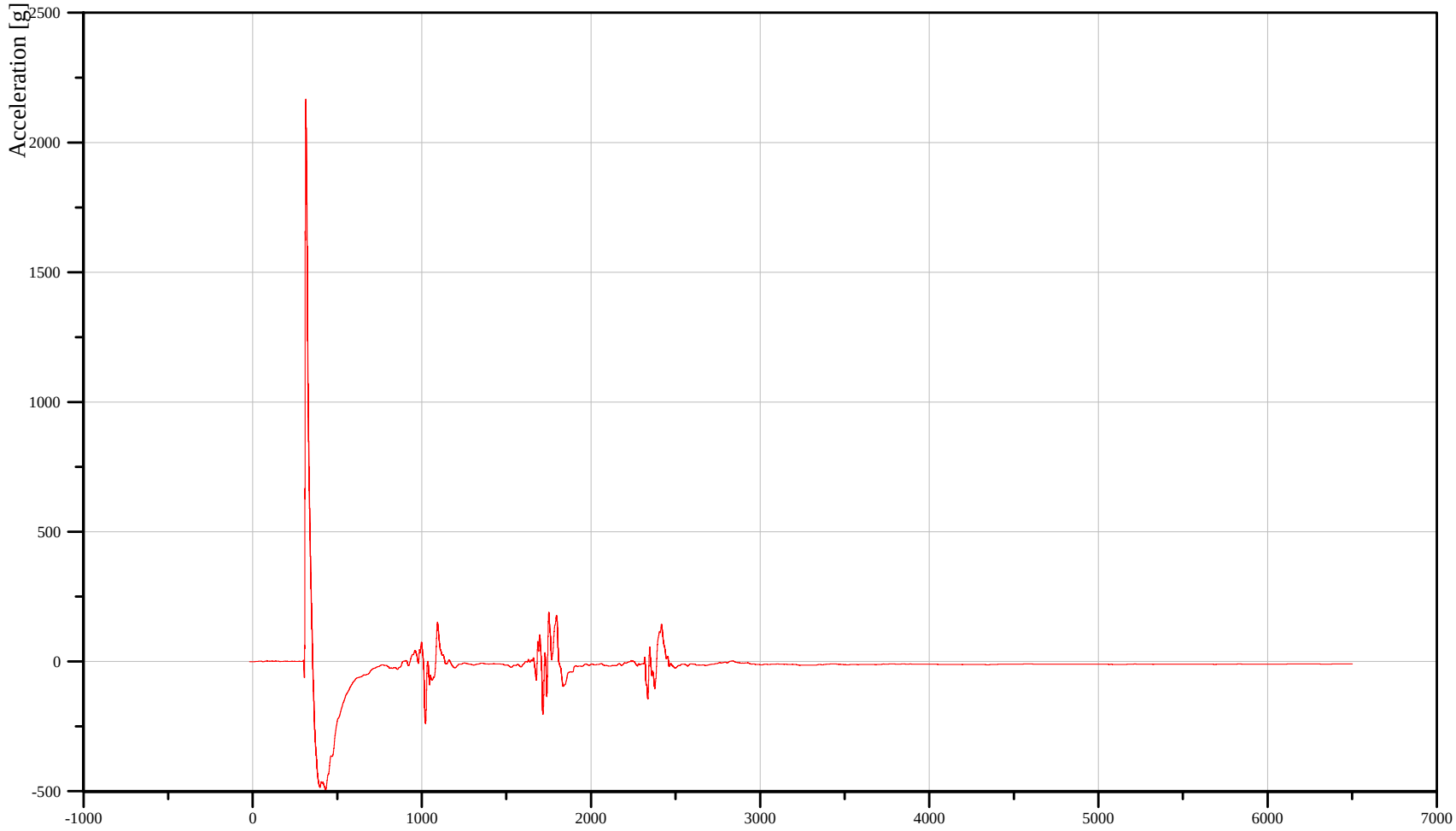
Right B-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPRI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-493.63 g at 430.80 ms

Max. Value
2,167.82 g at 313.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

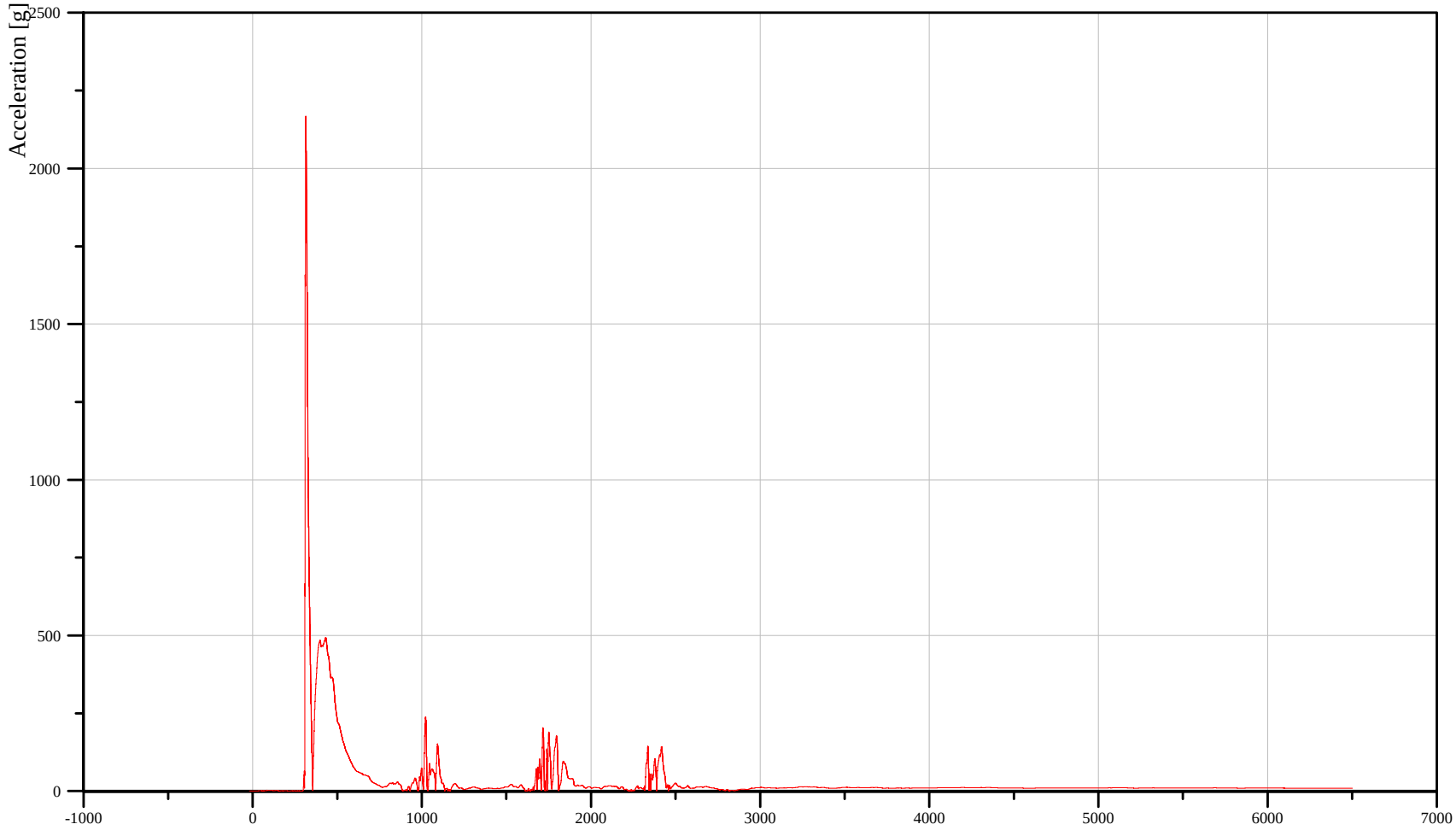
Right B-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILUPRI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.14 g at 1,612.32 ms

Max. Value
2,167.82 g at 313.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

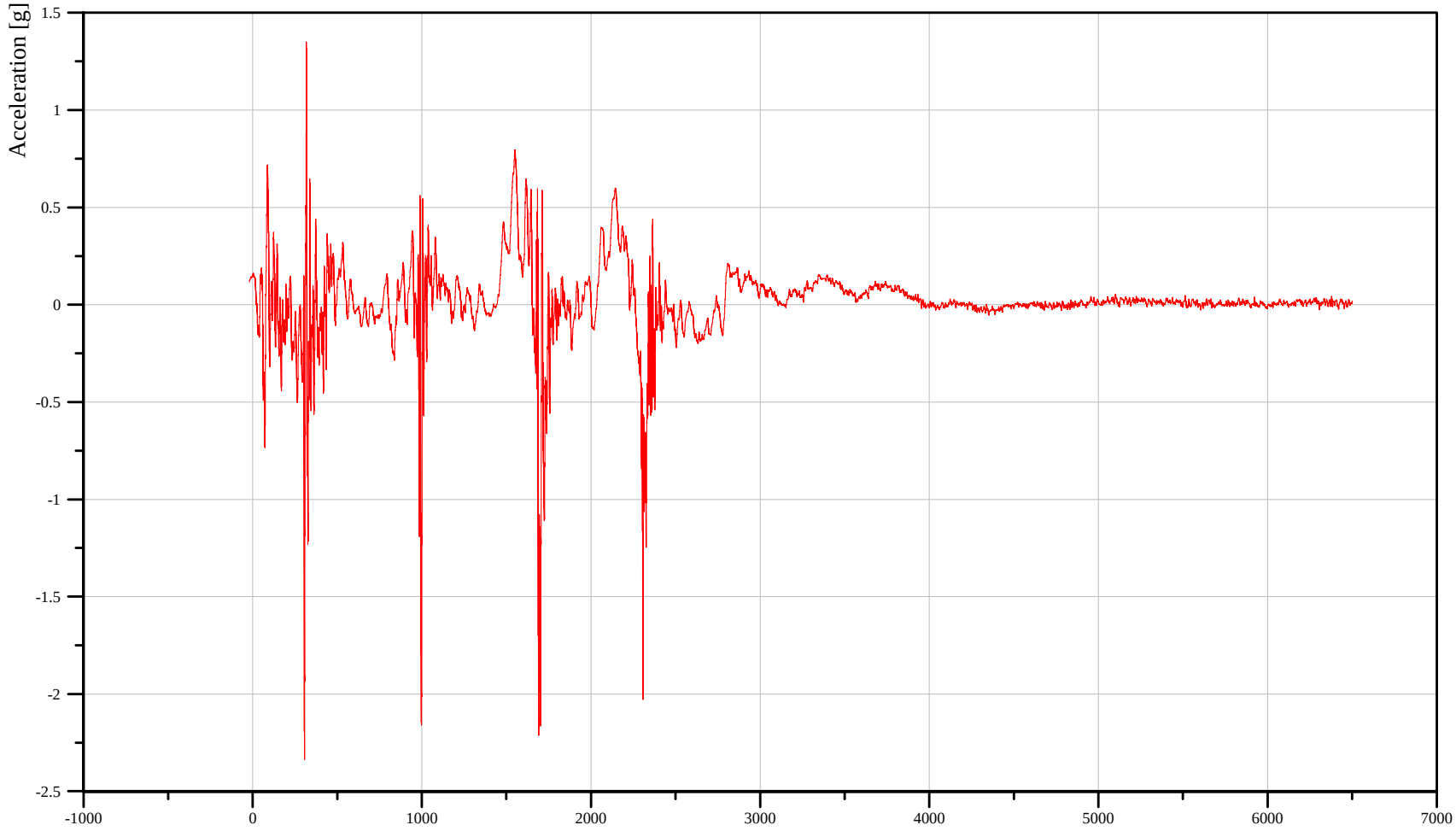
Right B-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLORI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2.34 g at 305.60 ms

Max. Value
1.35 g at 317.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

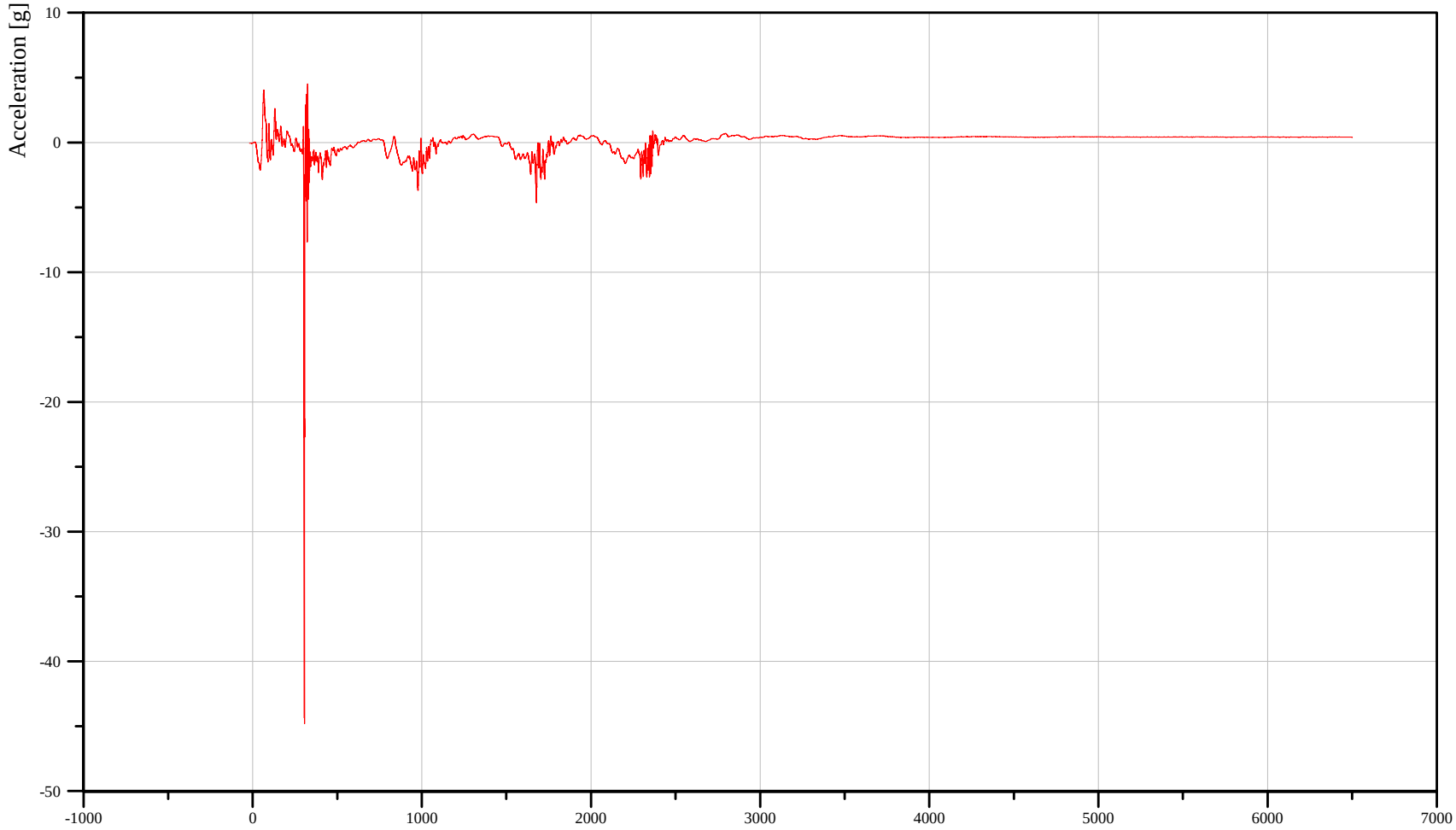
Right B-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLORI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-44.79 g at 305.36 ms

Max. Value
4.52 g at 324.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

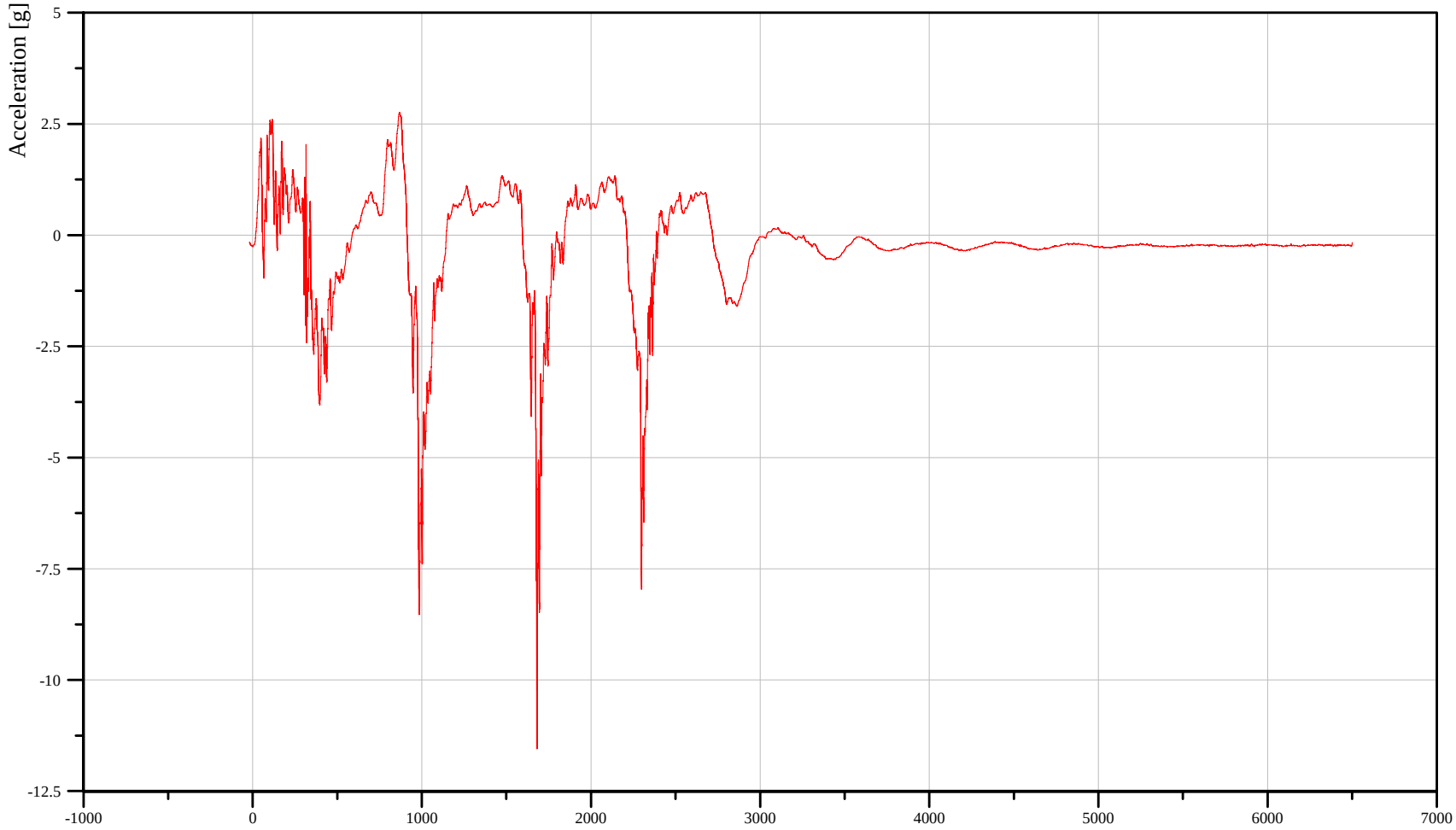
Right B-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLORI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-11.55 g at 1,680.96 ms

Max. Value
2.76 g at 867.68 ms

FMVSS 208 Rollover 2007 Ford Expedition

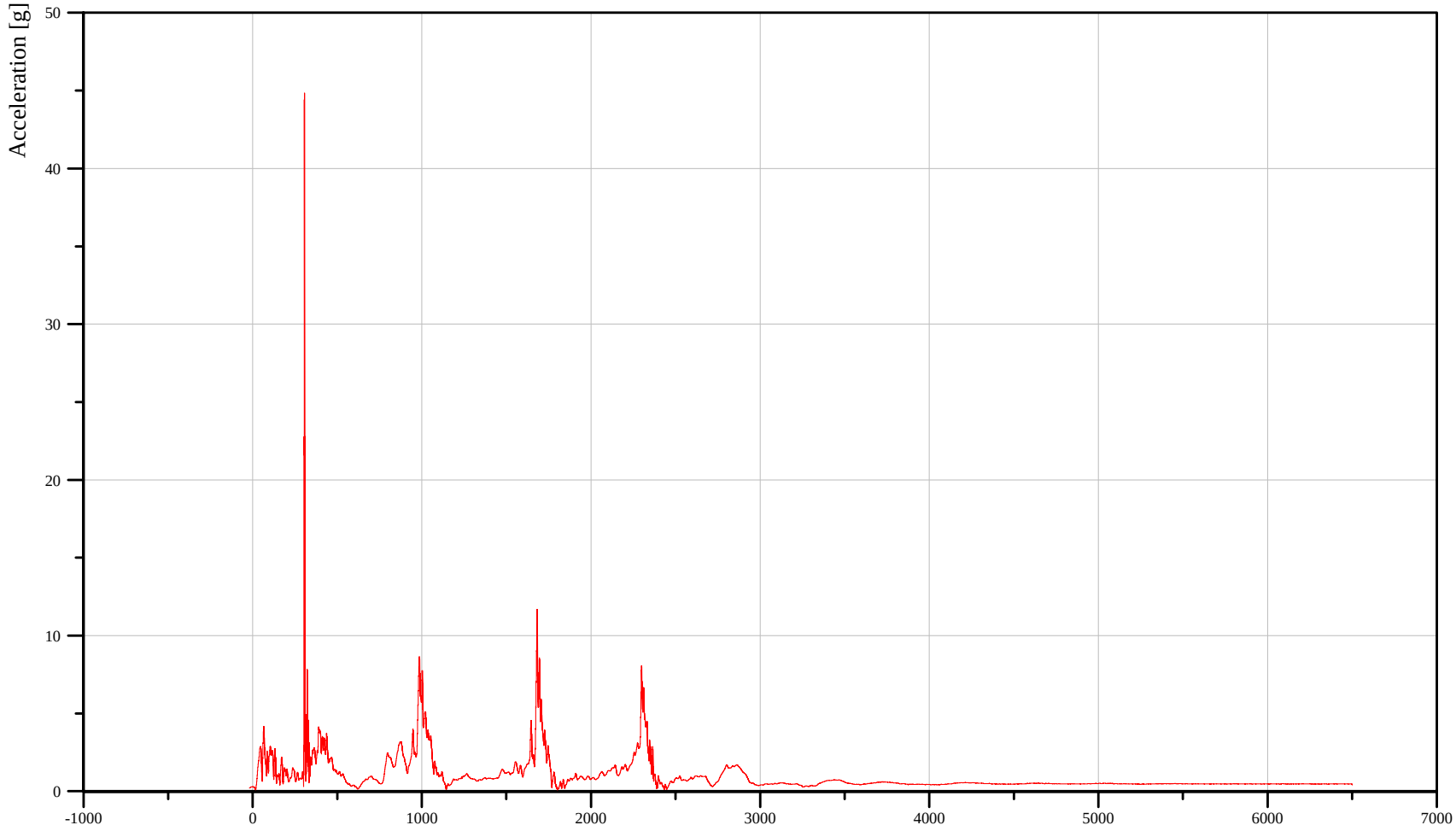
Right B-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10BPILLORI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.09 g at 16.96 ms

Max. Value
44.85 g at 305.36 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

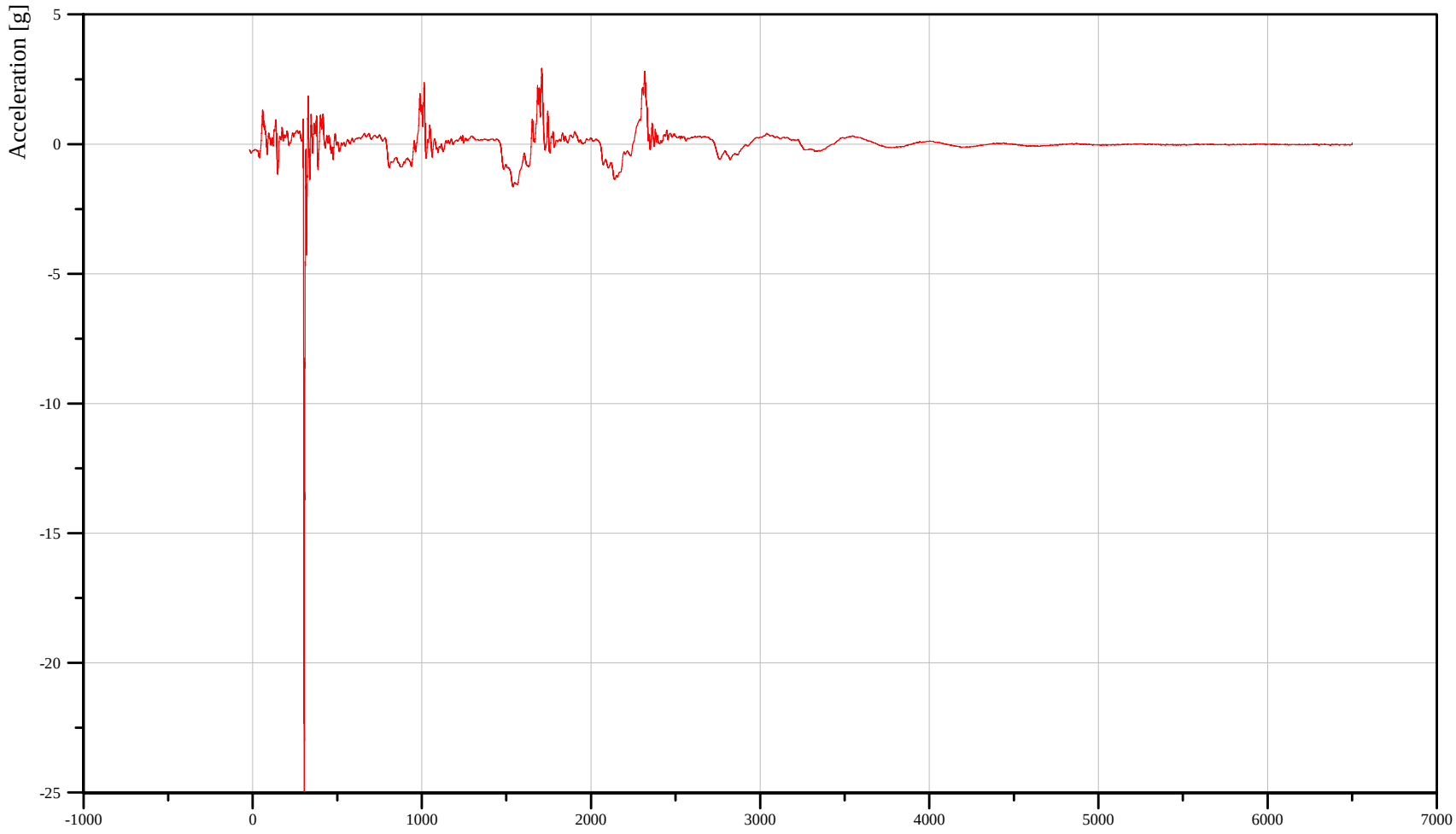
Left C-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-24.98 g at 304.16 ms

Max. Value
2.93 g at 1,708.16 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

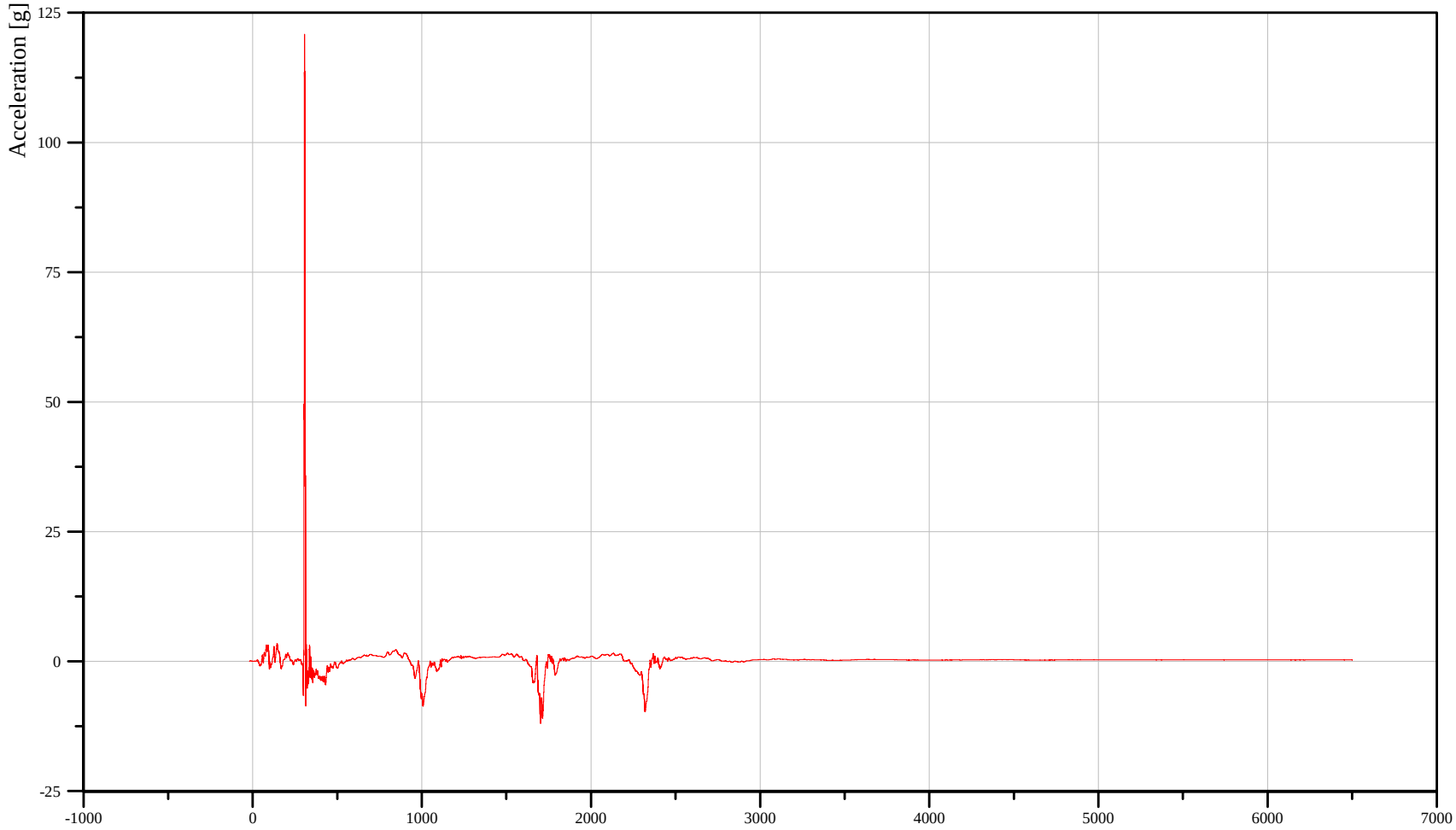
Left C-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-11.93 g at 1,701.12 ms

Max. Value
120.86 g at 305.92 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

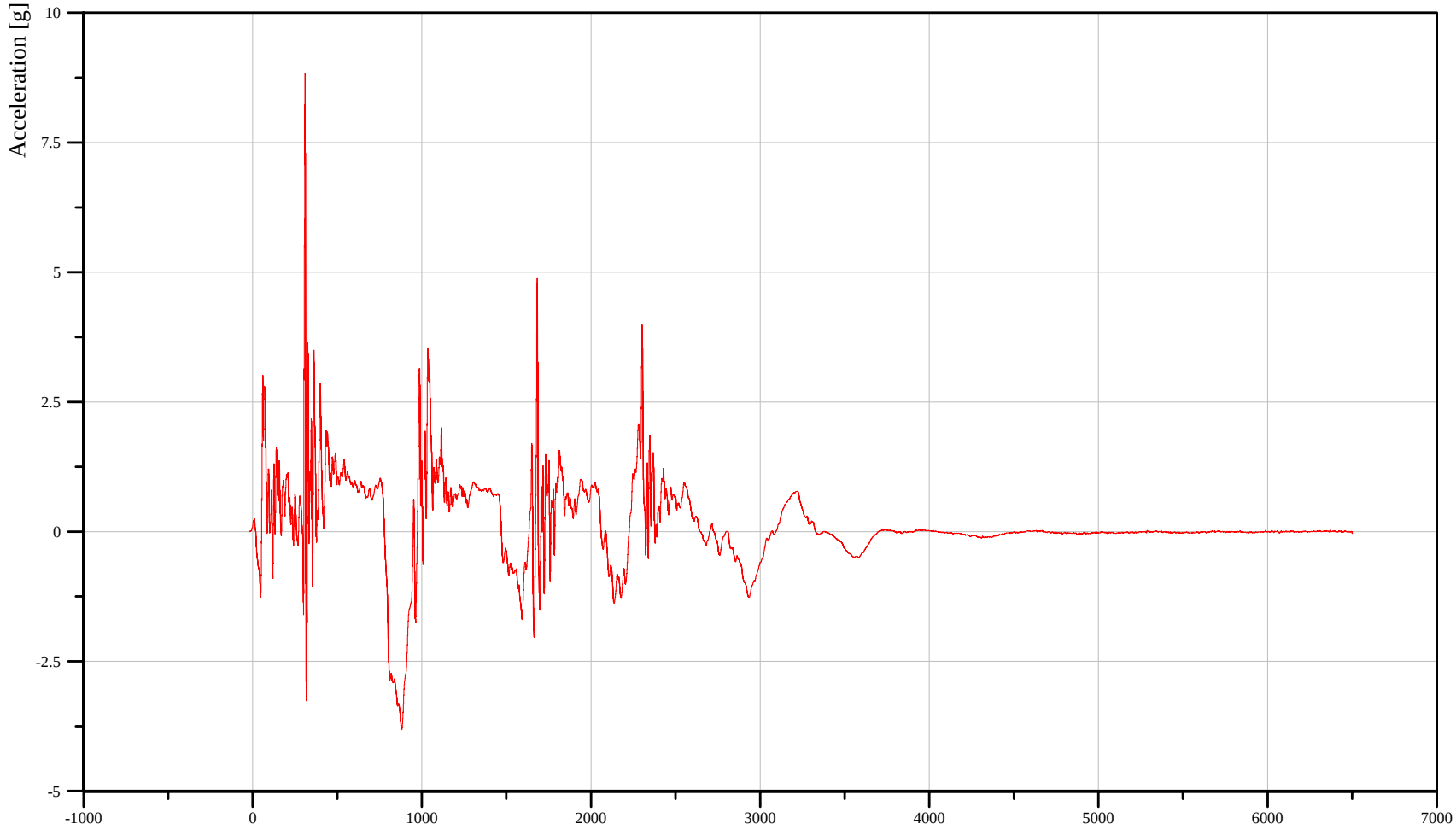
Left C-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.82 g at 880.88 ms

Max. Value
8.83 g at 309.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

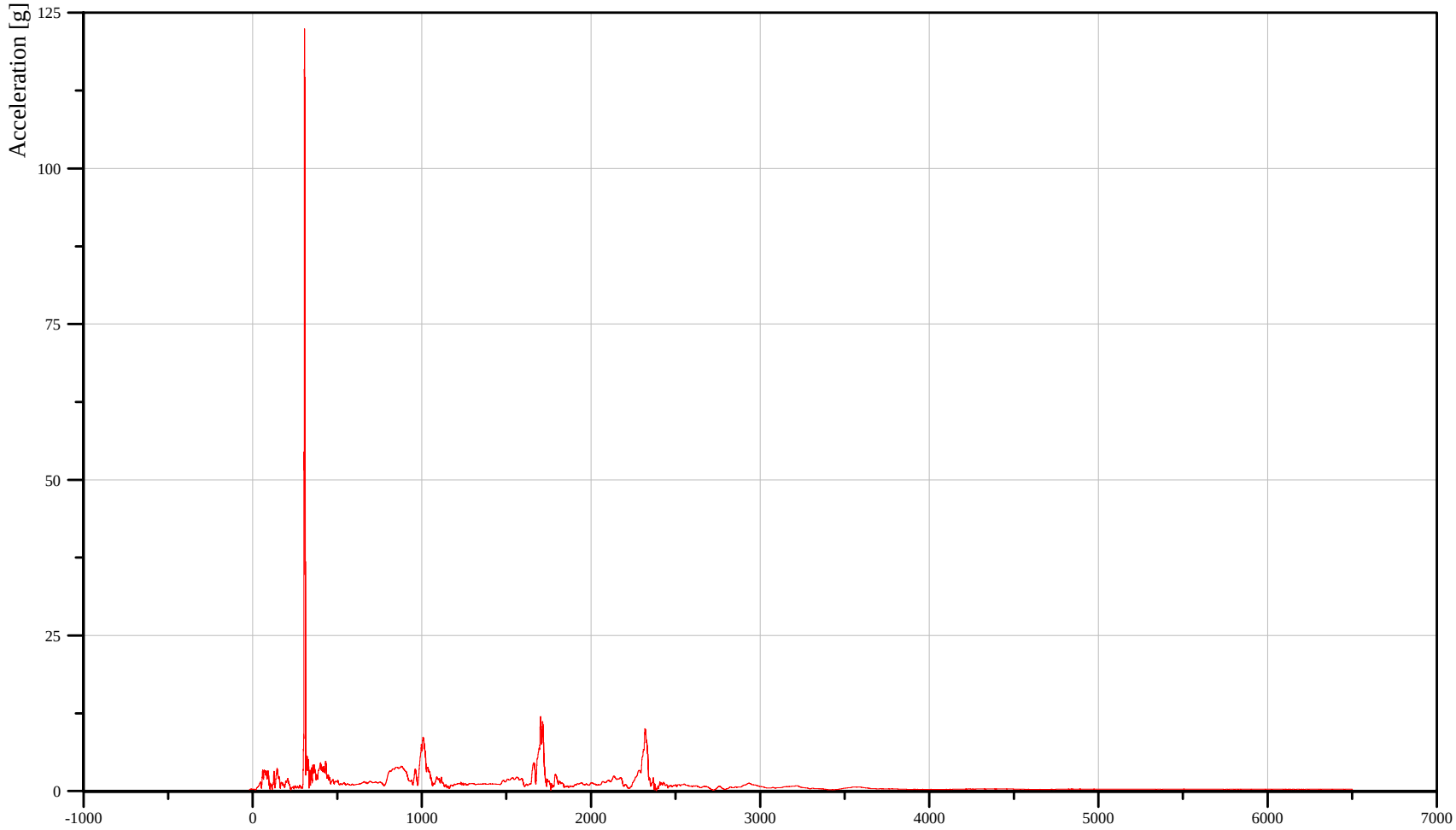
Left C-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.07 g at 2,386.00 ms

Max. Value
122.44 g at 305.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

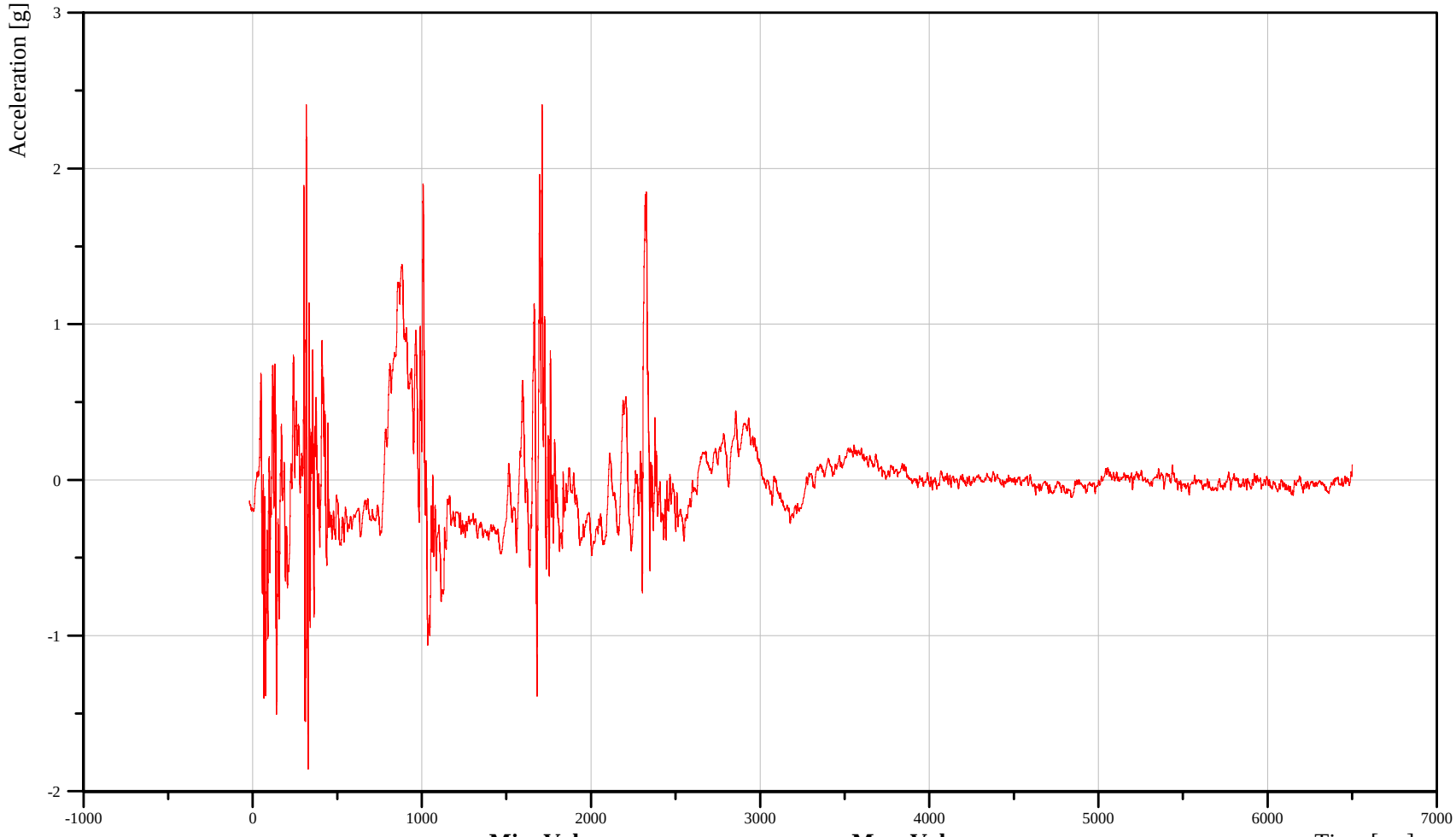
Left C-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLOLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.86 g at 327.68 ms

Max. Value
2.41 g at 1,710.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

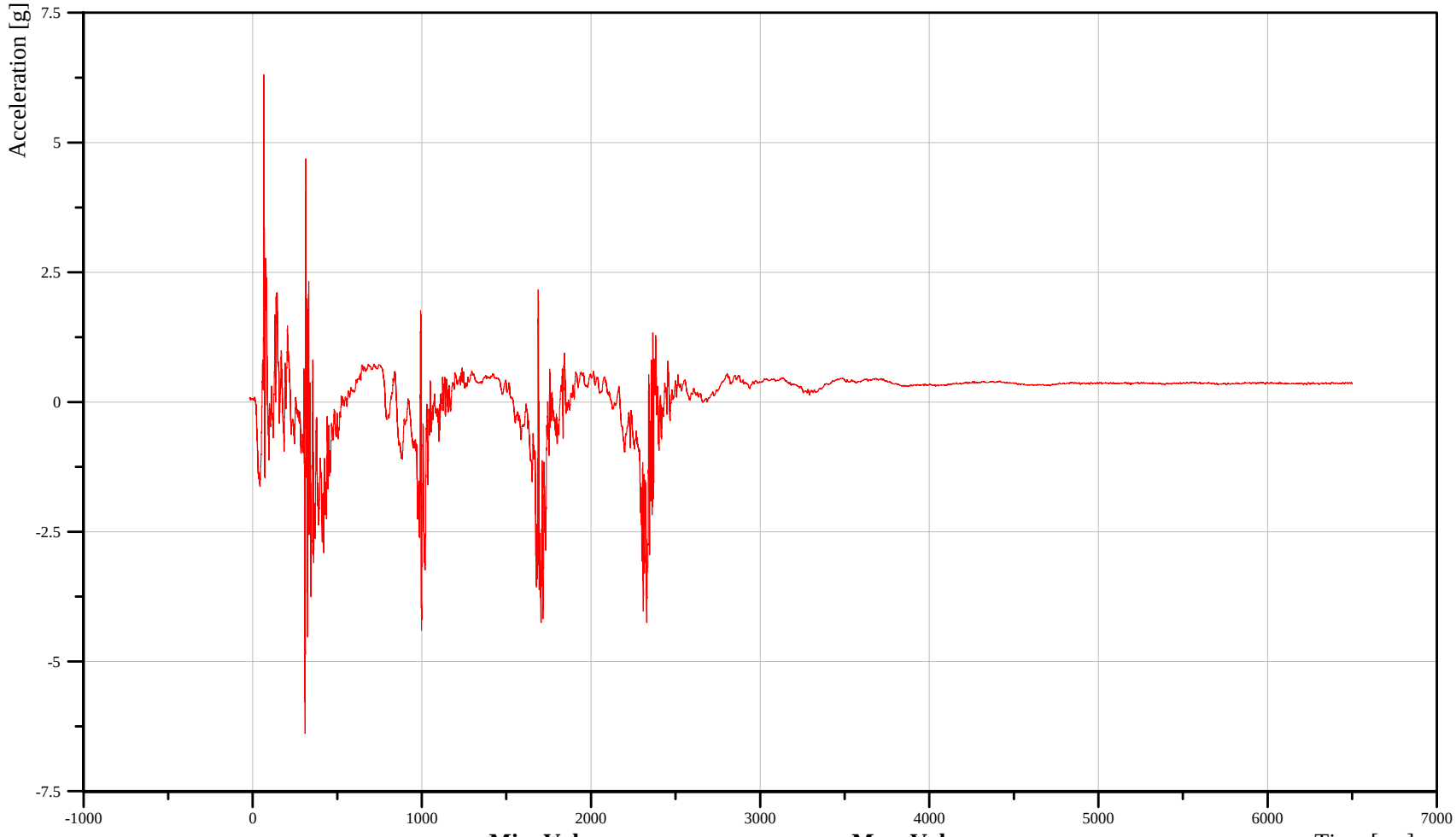
Left C-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLOLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-6.39 g at 309.44 ms

Max. Value
6.30 g at 65.76 ms

FMVSS 208 Rollover 2007 Ford Expedition

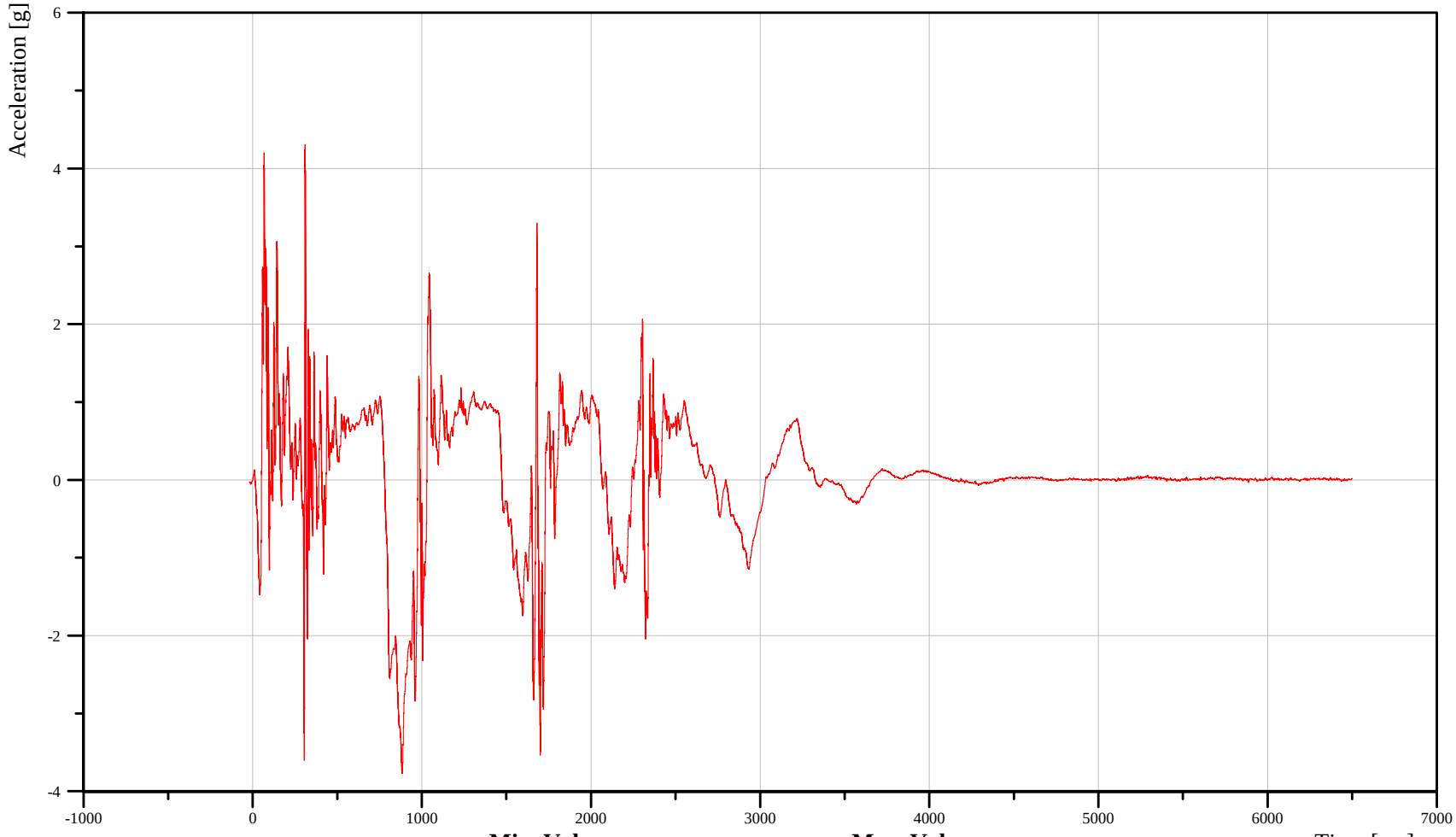
Left C-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLOLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.77 g at 883.52 ms

Max. Value
4.30 g at 309.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

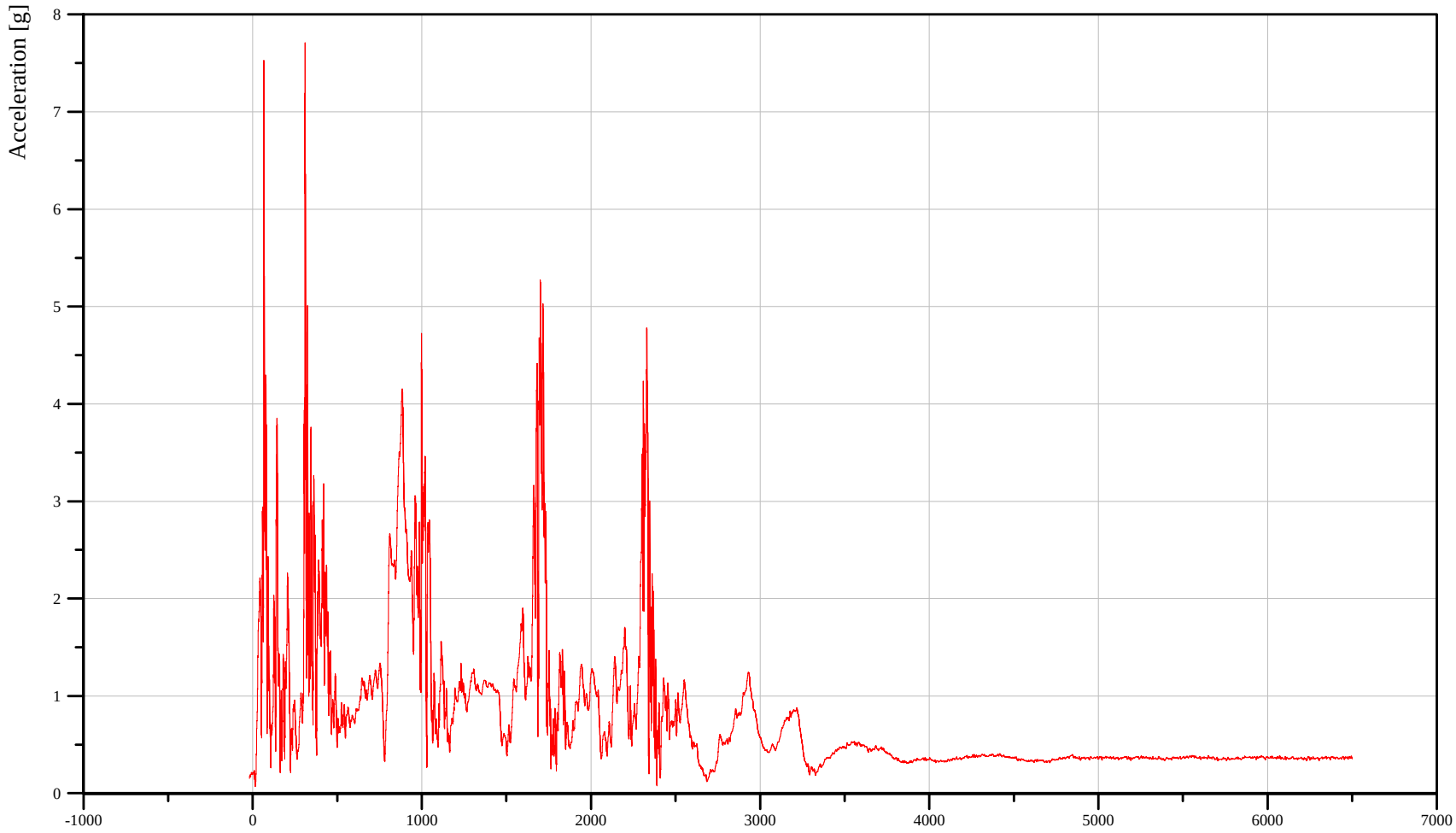
Left C-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLOLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.07 g at 14.40 ms

Max. Value
7.71 g at 309.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

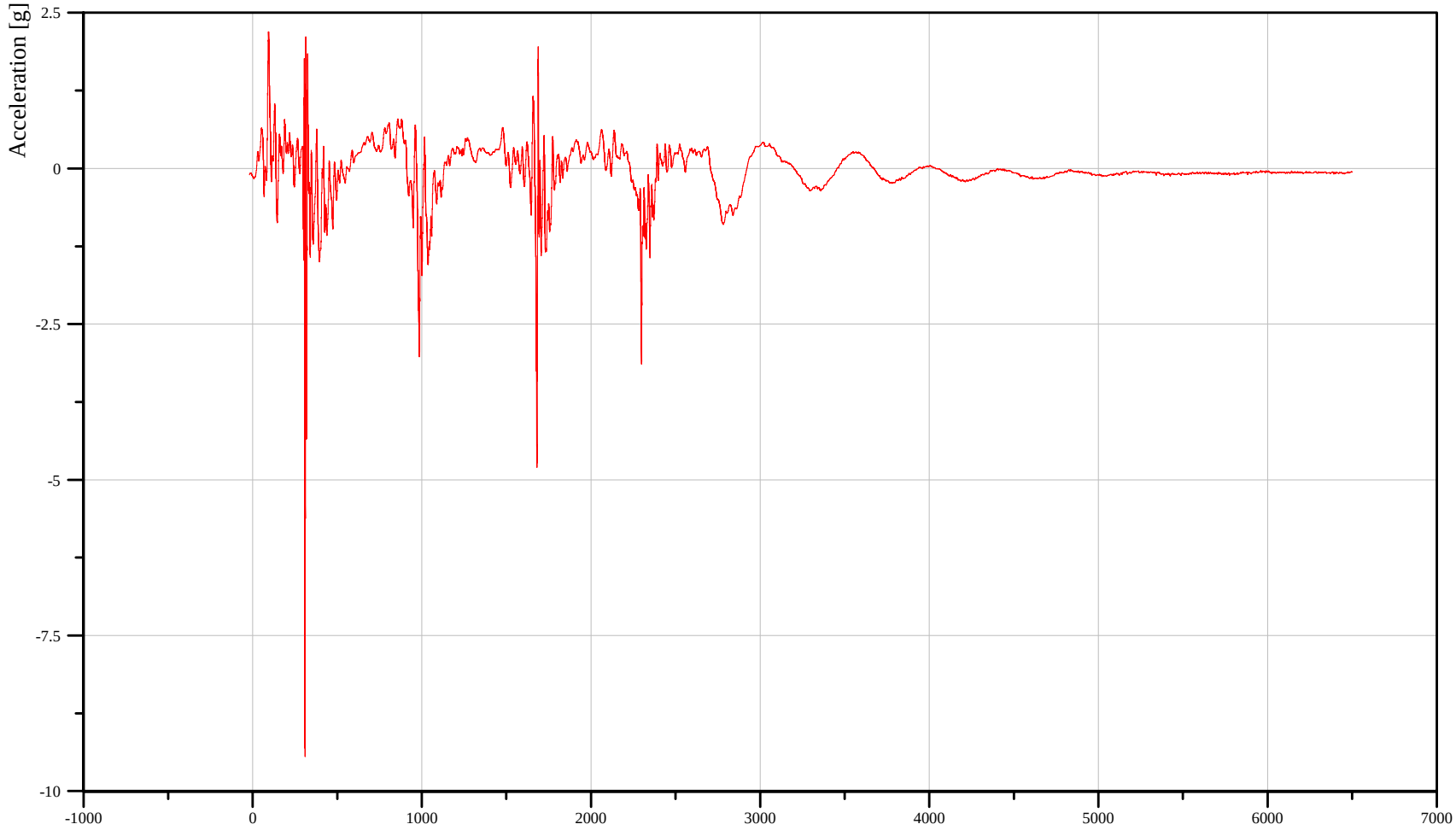
Right C-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPRI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-9.45 g at 308.96 ms

Max. Value
2.20 g at 93.12 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

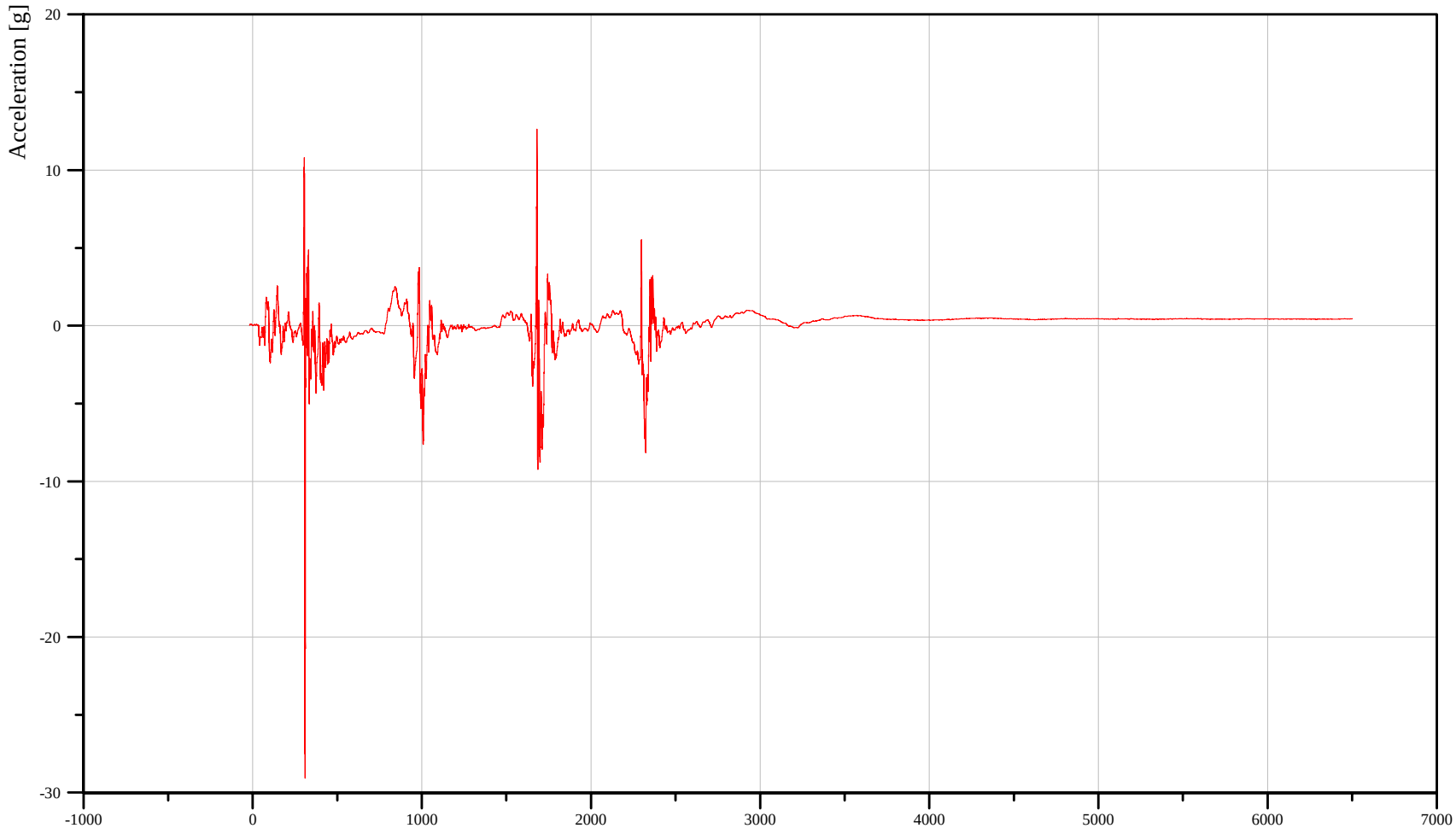
Right C-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPRI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-29.06 g at 309.20 ms

Max. Value
12.63 g at 1,679.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

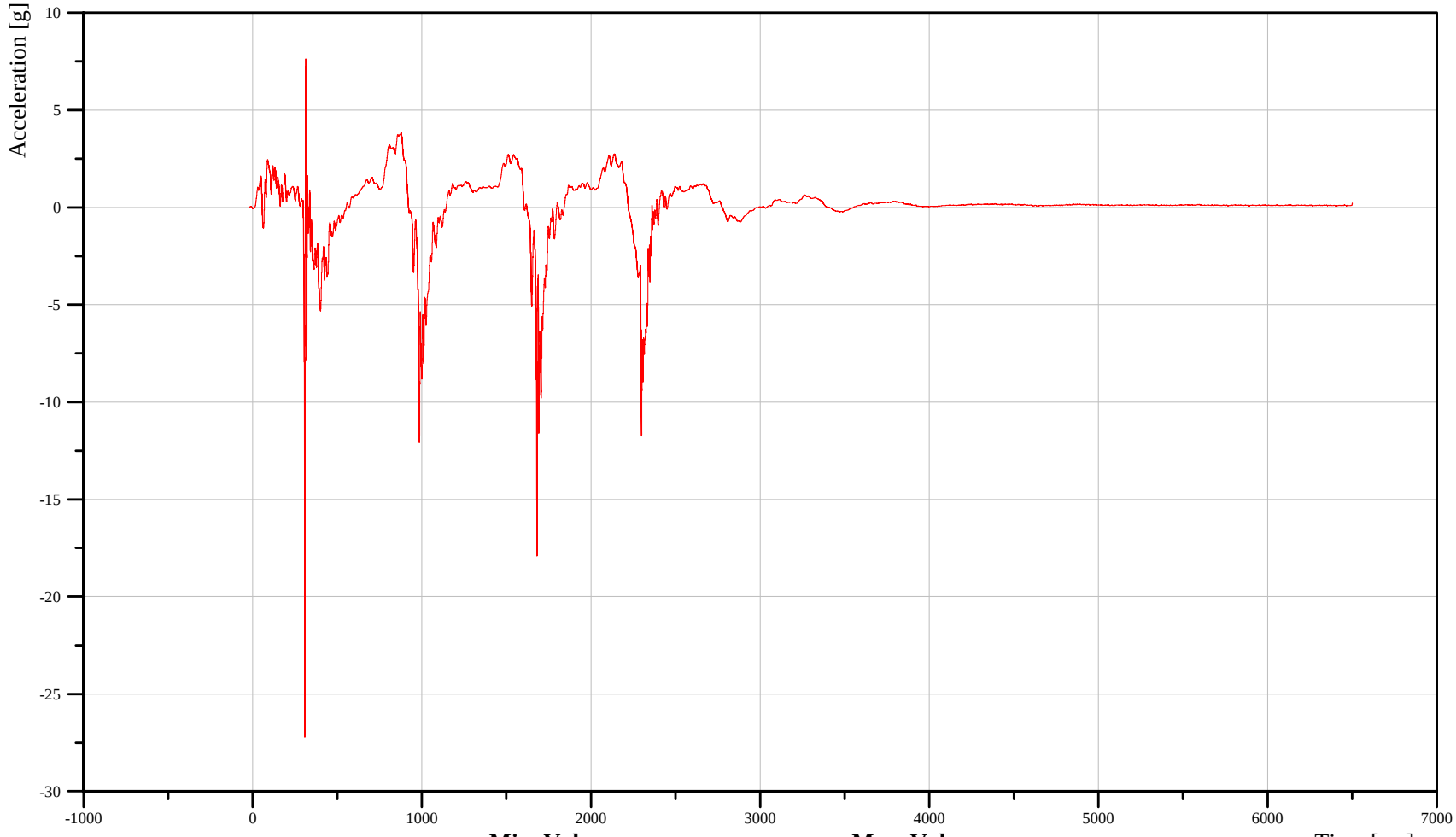
Right C-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPRI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-27.22 g at 308.48 ms

Max. Value
7.62 g at 312.72 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

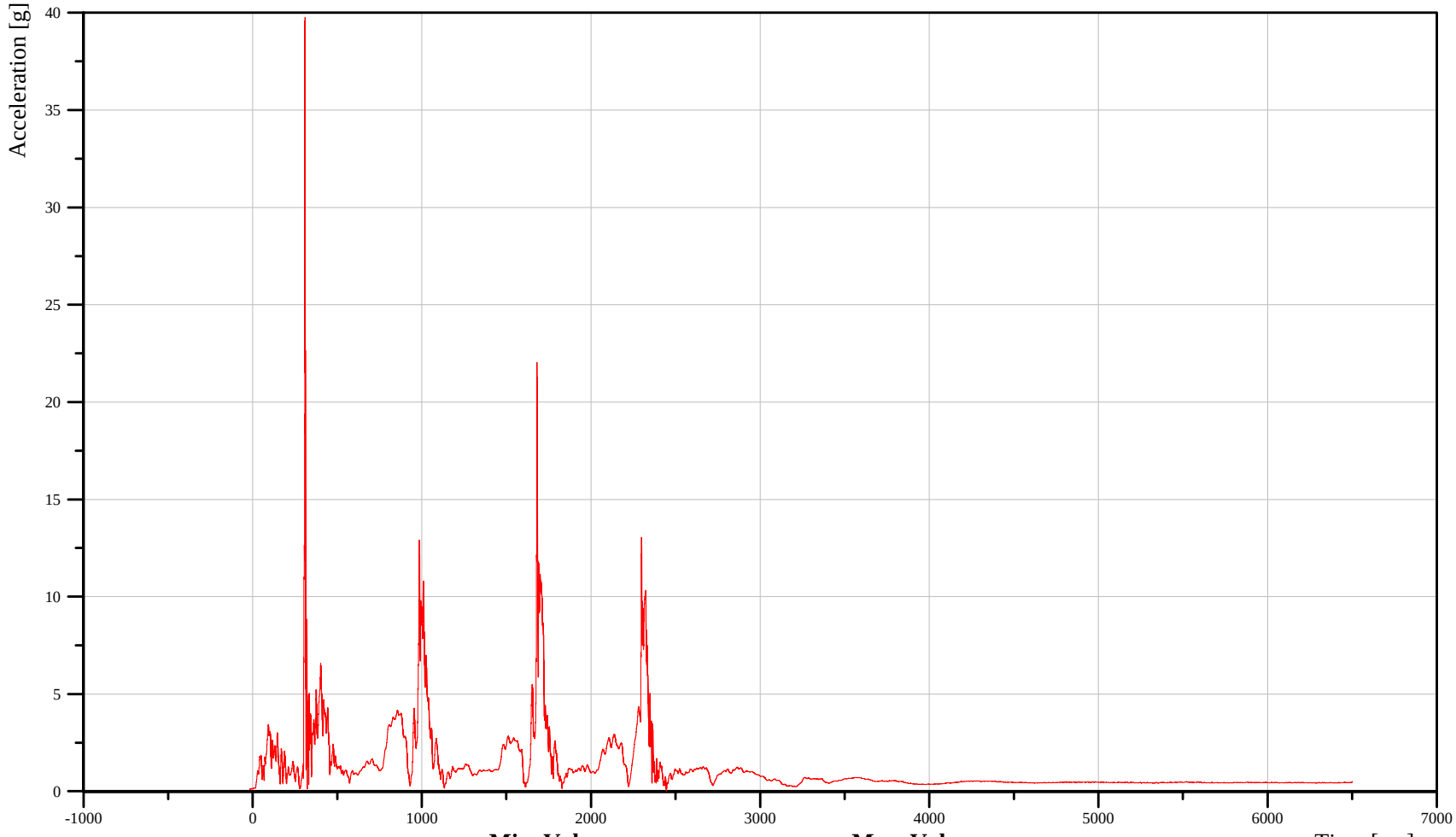
Right C-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILUPRI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.02 g at 2,445.84 ms

Max. Value
39.75 g at 308.88 ms

FMVSS 208 Rollover 2007 Ford Expedition

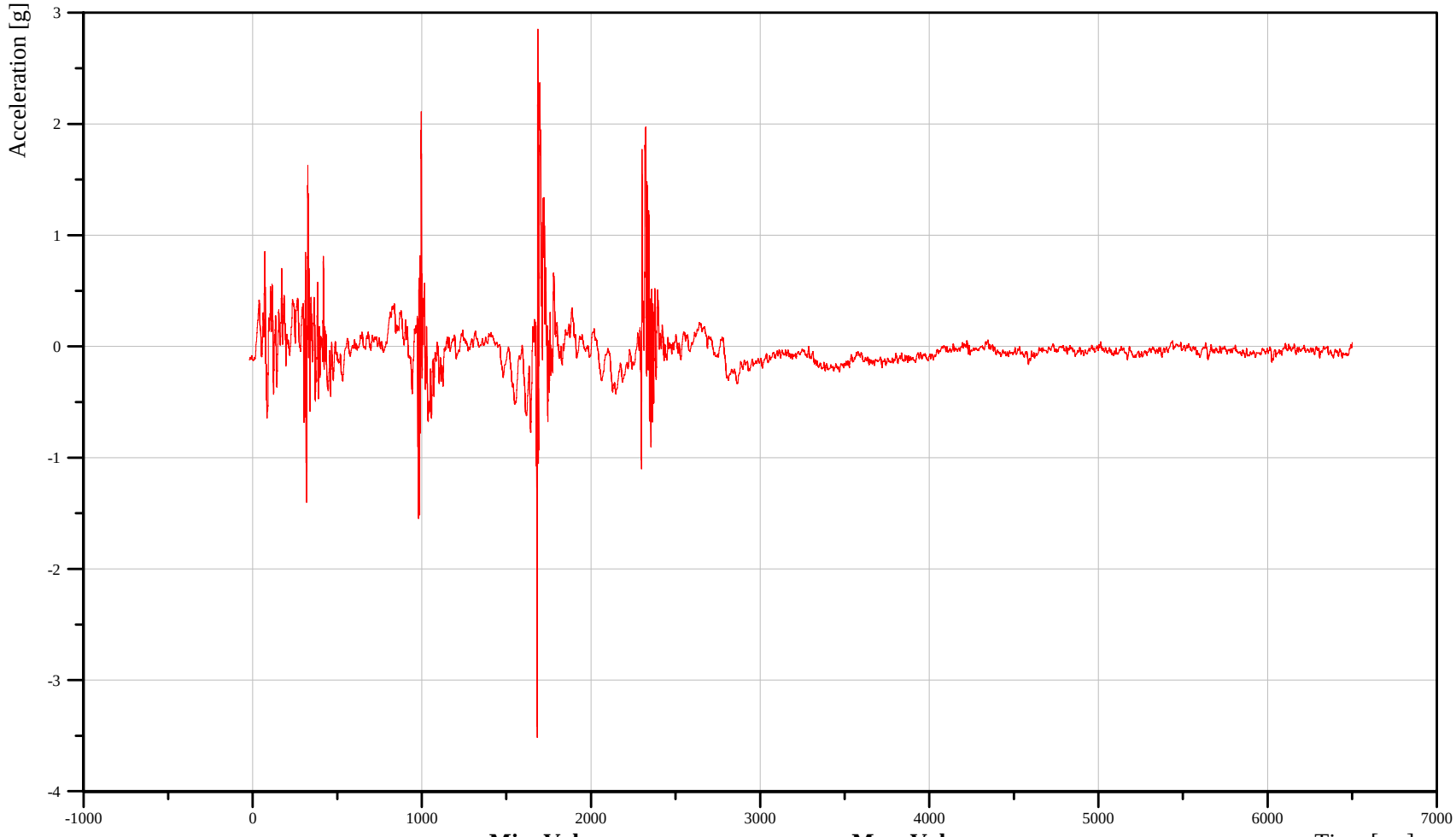
Right C-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLORI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.52 g at 1,681.28 ms

Max. Value
2.85 g at 1,685.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

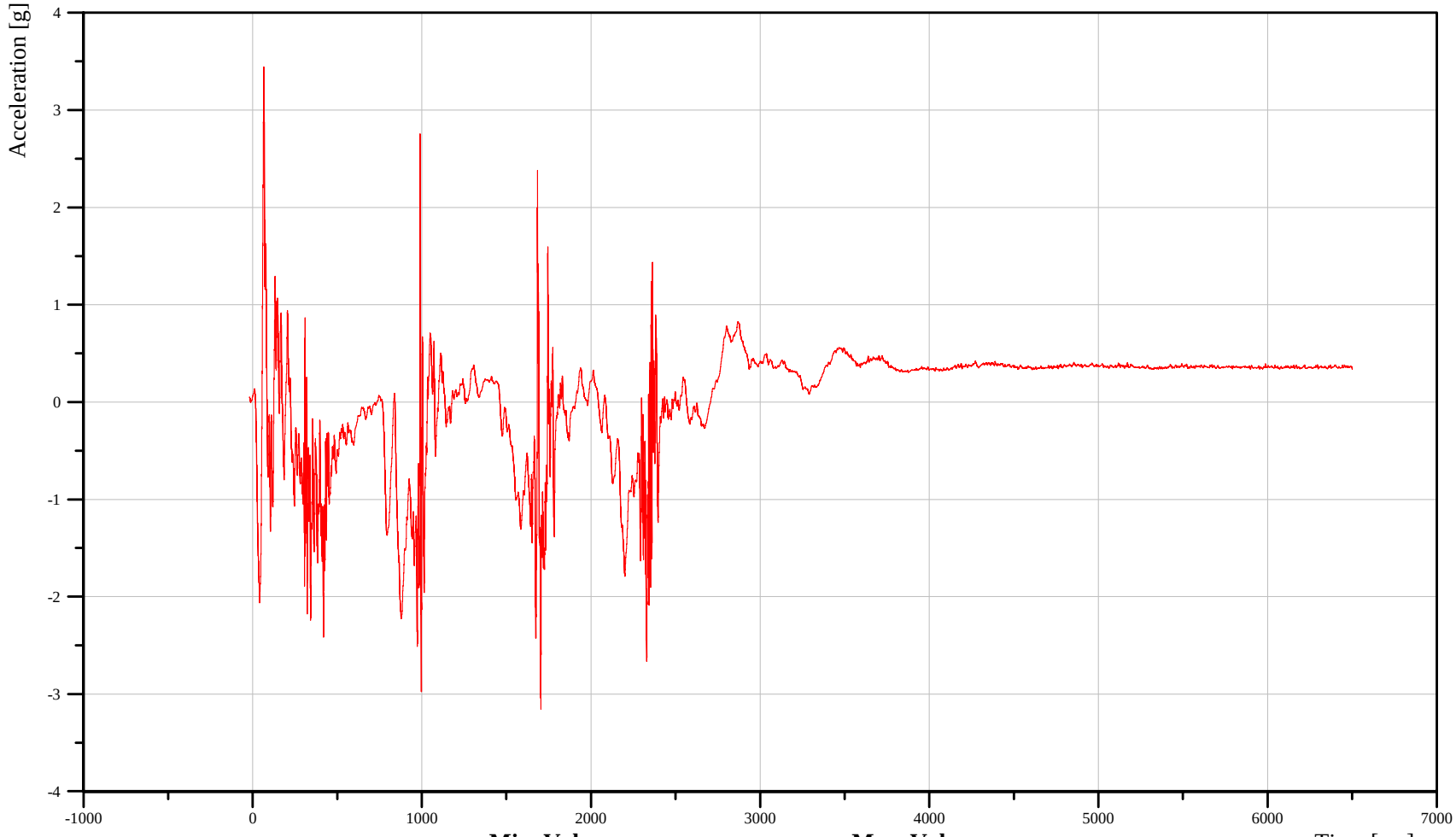
Right C-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLORI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.16 g at 1,702.96 ms

Max. Value
3.44 g at 65.60 ms

FMVSS 208 Rollover 2007 Ford Expedition

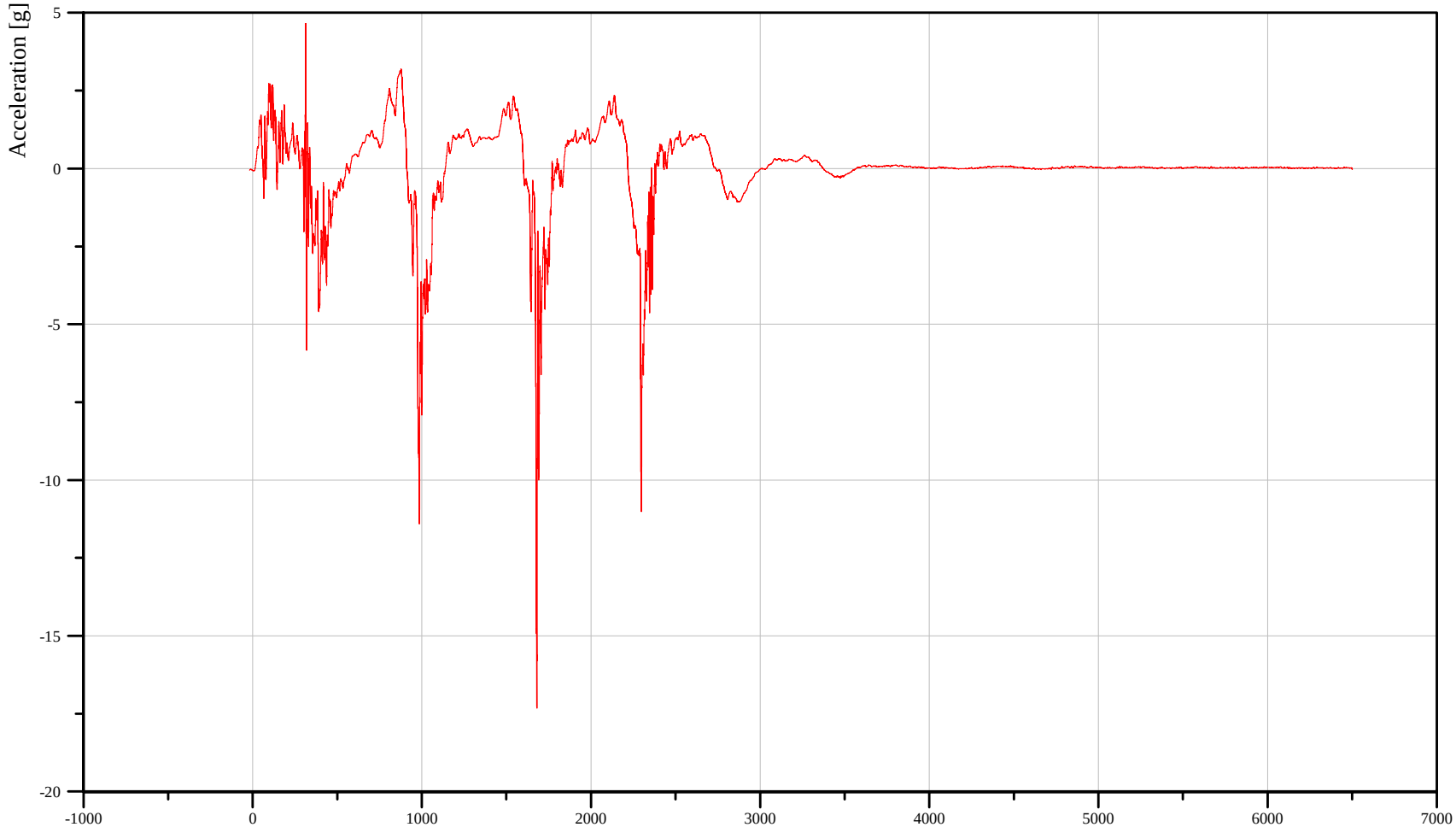
Right C-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLORI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-17.33 g at 1,679.44 ms

Max. Value
4.65 g at 312.40 ms

FMVSS 208 Rollover 2007 Ford Expedition

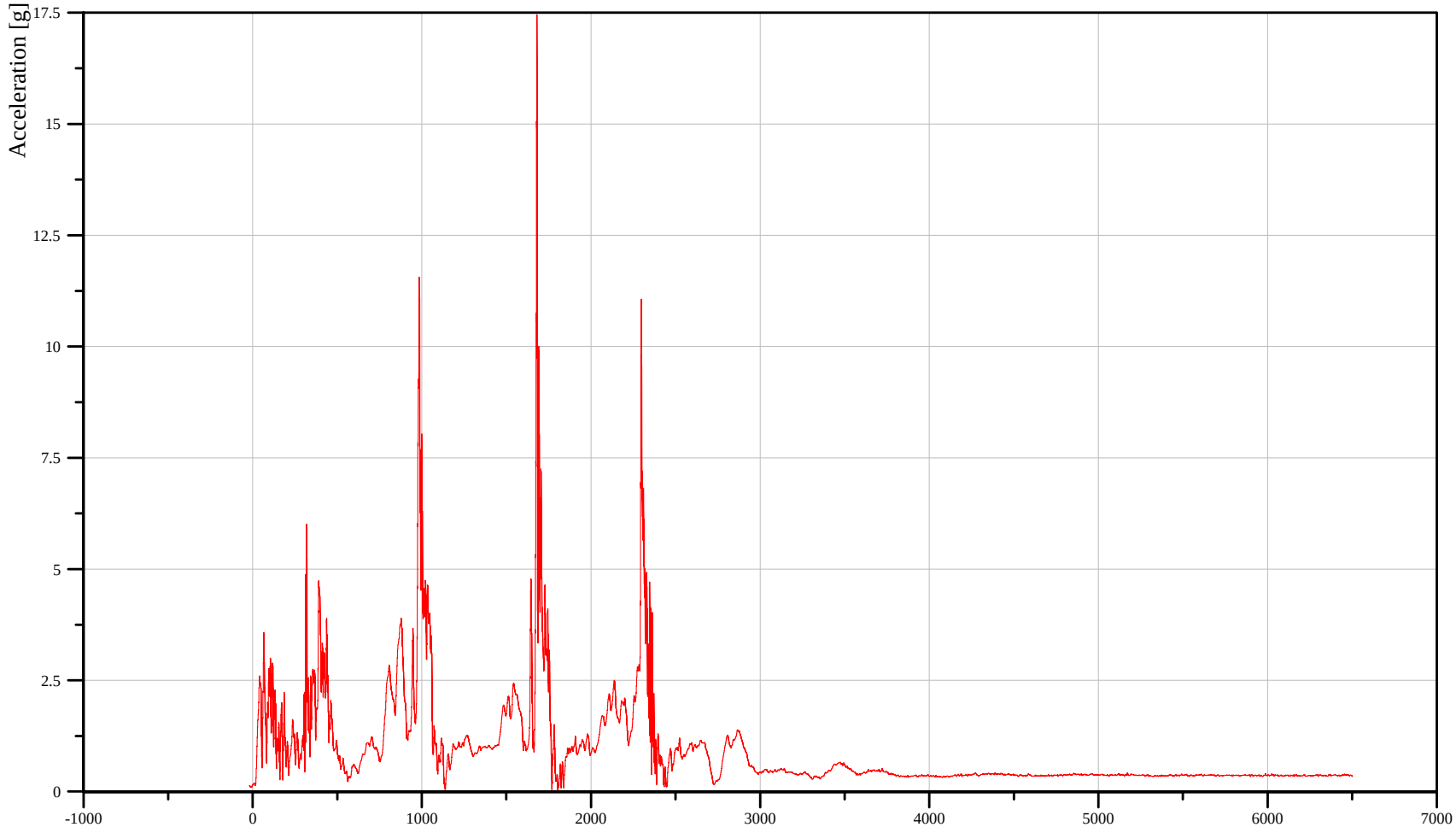
Right C-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10CPILLORI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.03 g at 1,803.84 ms

Max. Value
17.45 g at 1,679.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

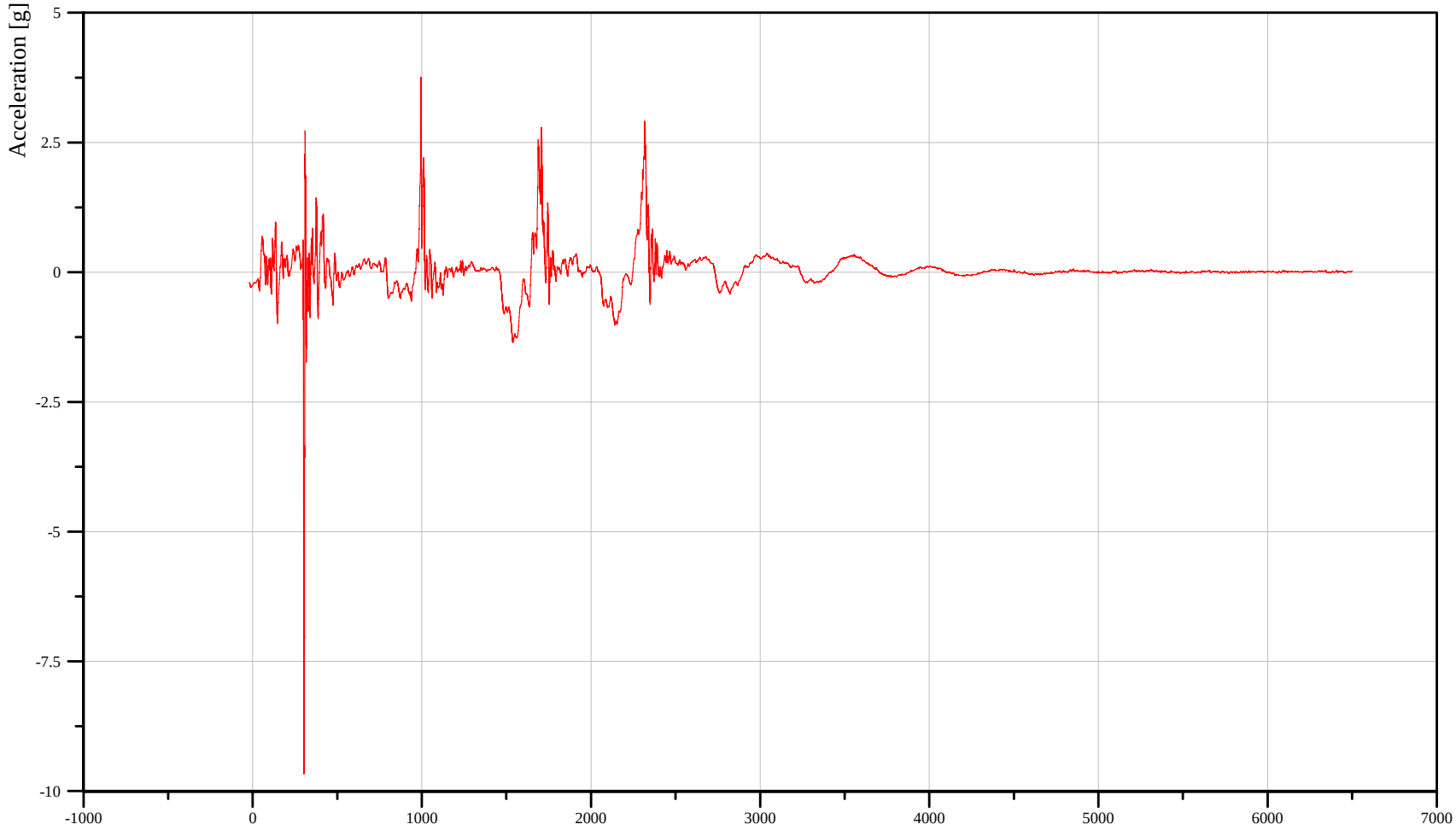
Left D-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-9.67 g at 303.20 ms

Max. Value
3.76 g at 994.64 ms

FMVSS 208 Rollover 2007 Ford Expedition

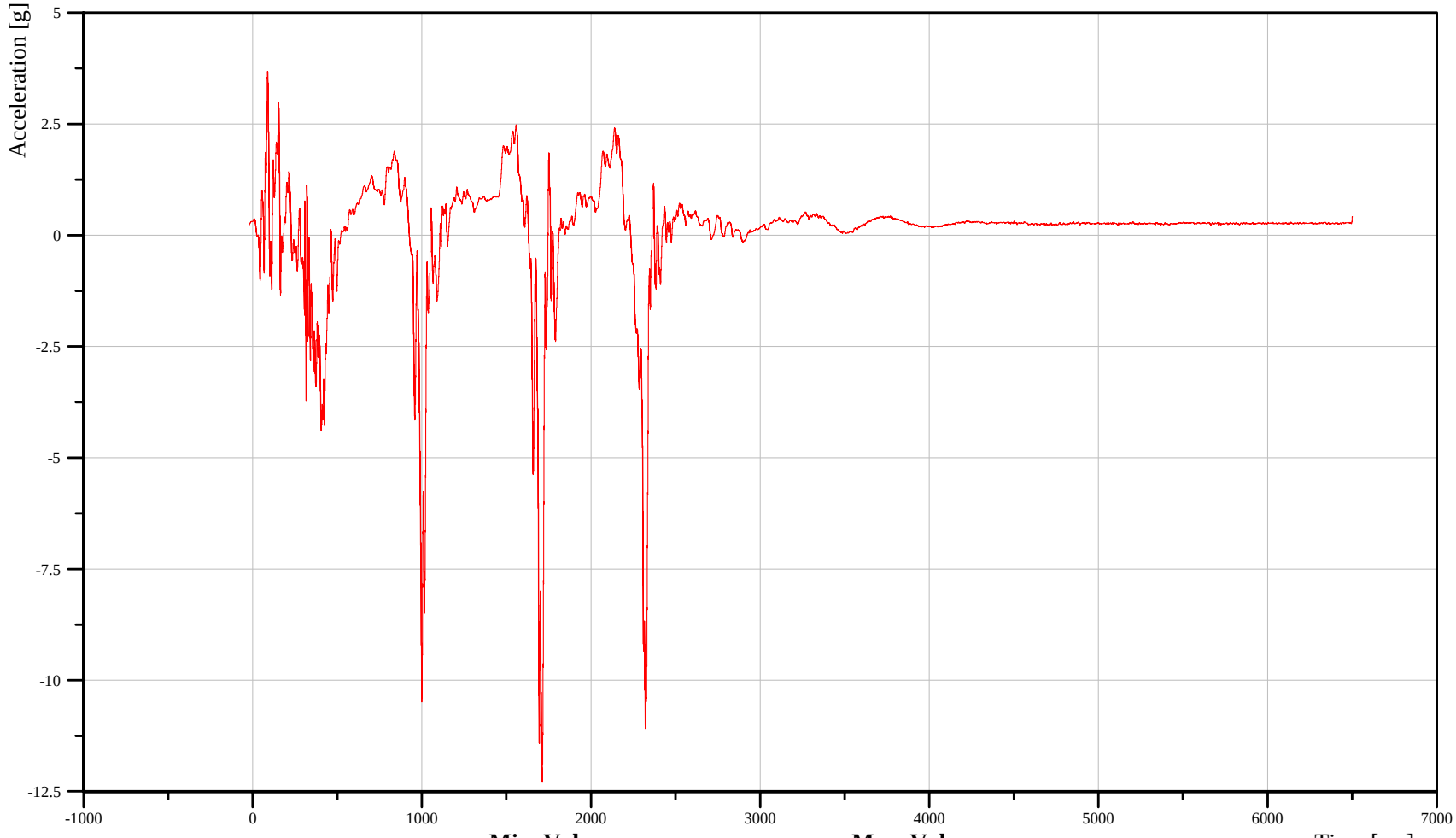
Left D-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-12.29 g at 1,711.28 ms

Max. Value
3.69 g at 87.44 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

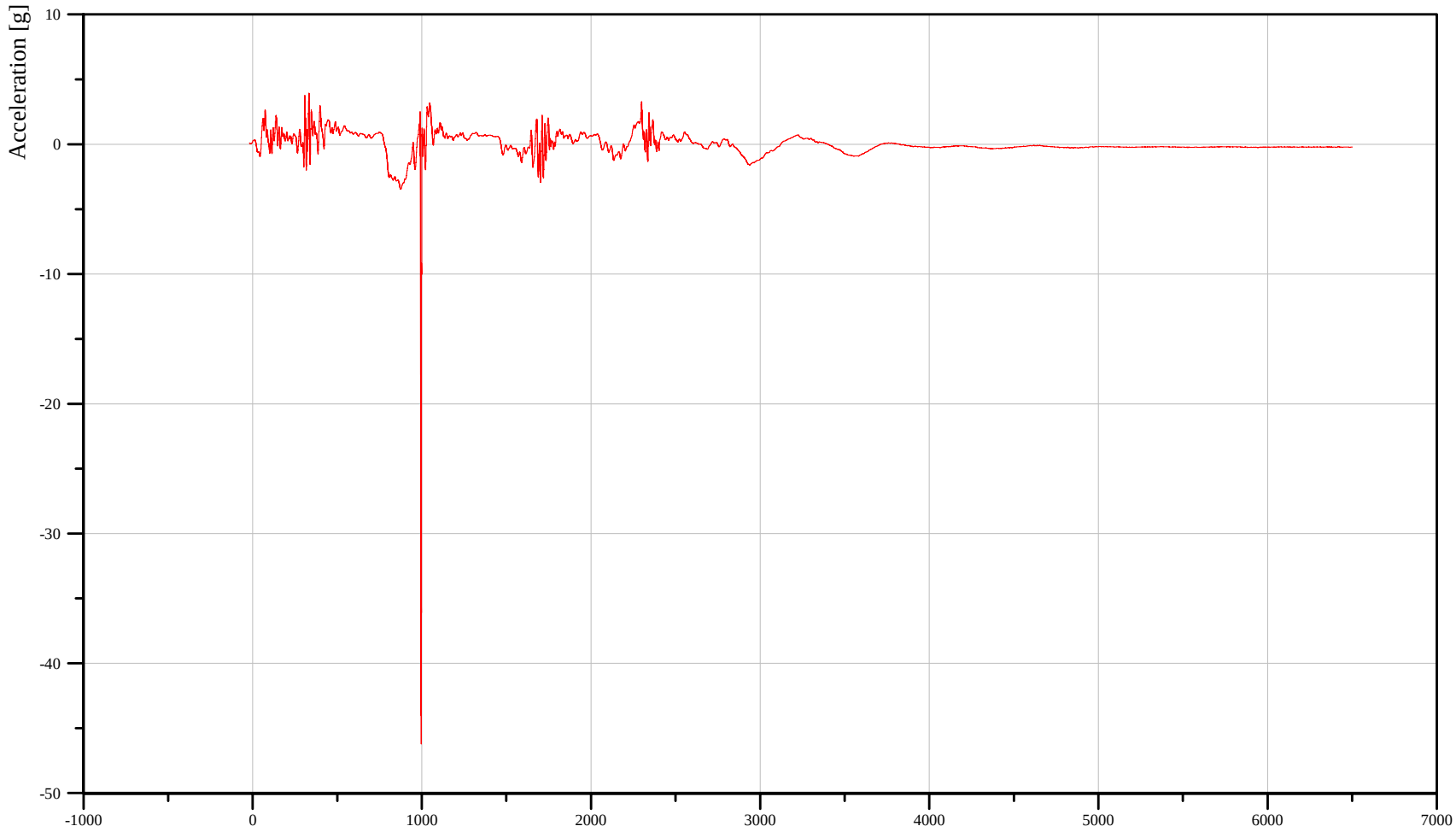
Left D-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-46.21 g at 995.28 ms

Max. Value
3.93 g at 331.92 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

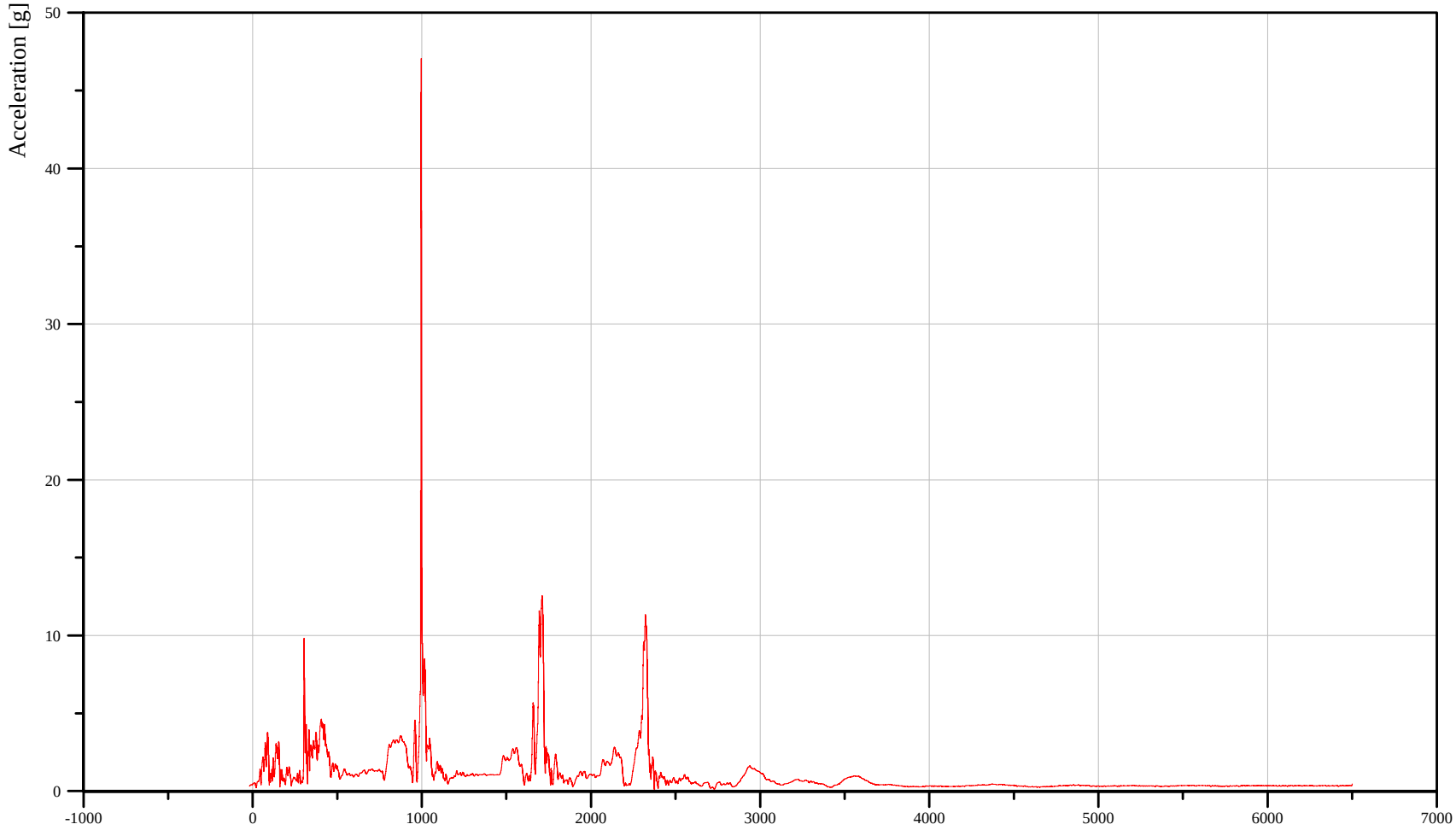
Left D-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.11 g at 2,374.08 ms

Max. Value
47.06 g at 995.28 ms

FMVSS 208 Rollover 2007 Ford Expedition

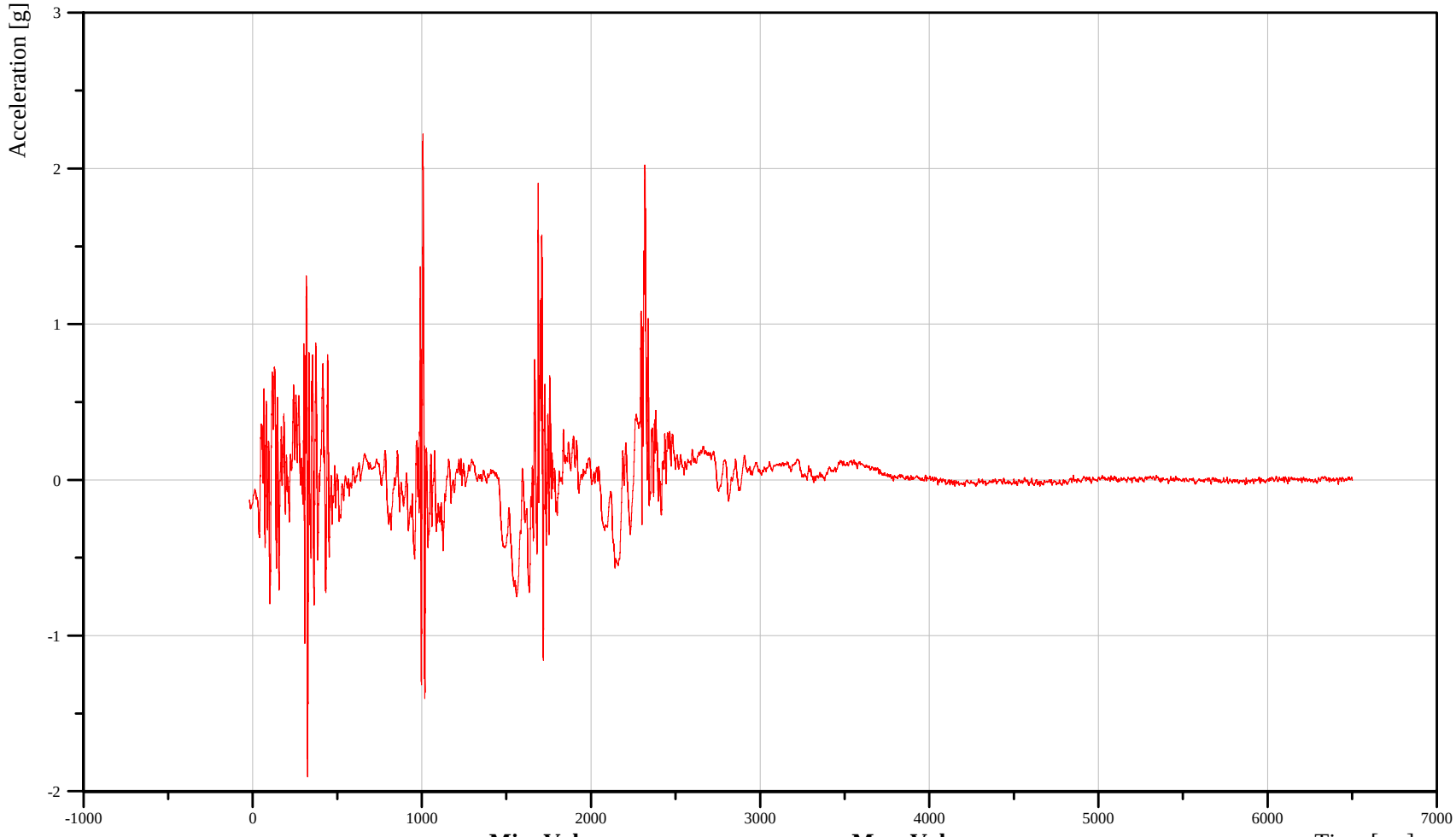
Left D-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLOLE00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.91 g at 323.60 ms

Max. Value
2.22 g at 1,006.16 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

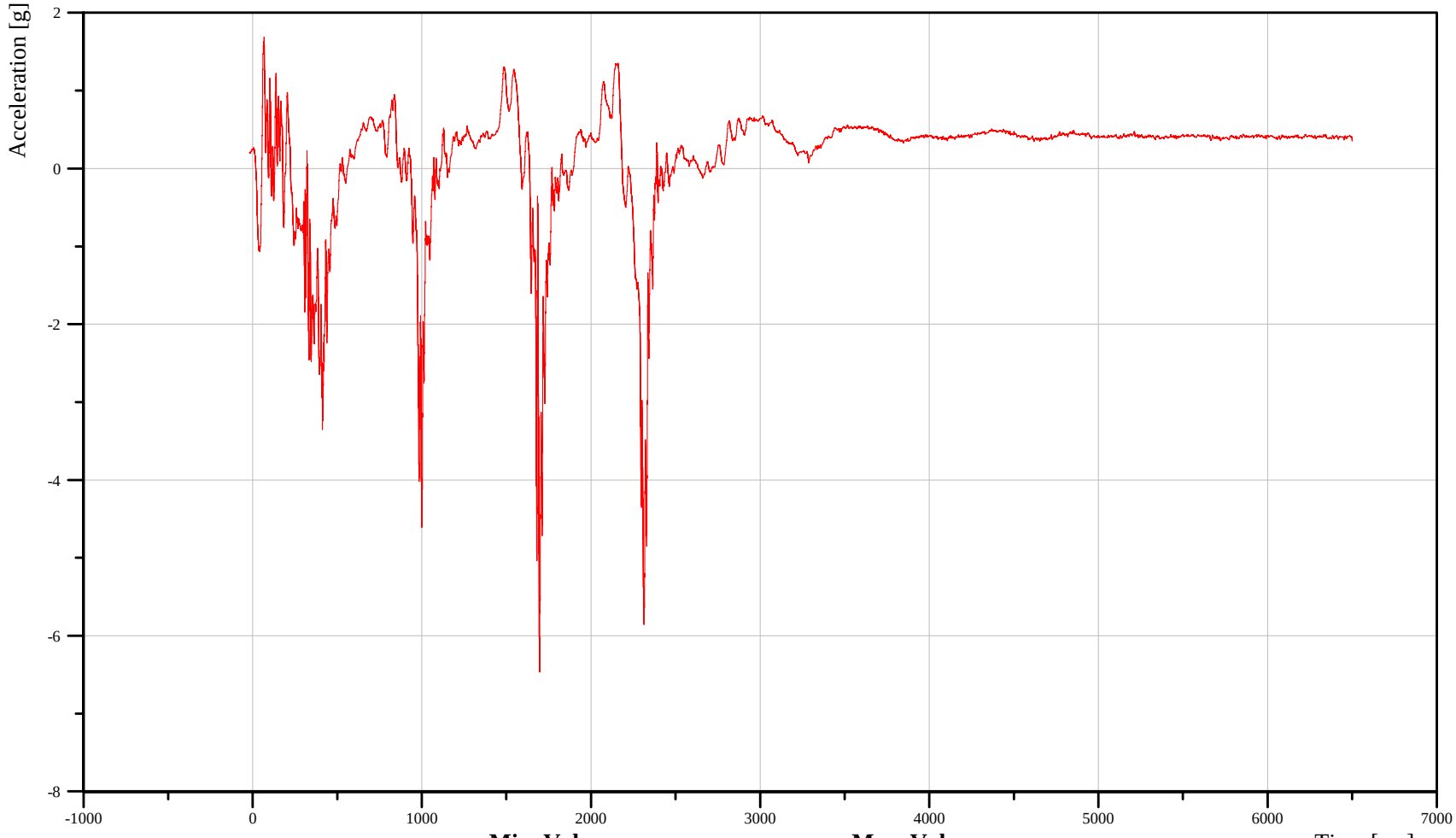
Left D-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLOLE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-6.47 g at 1,695.36 ms

Max. Value
1.69 g at 67.04 ms

FMVSS 208 Rollover 2007 Ford Expedition

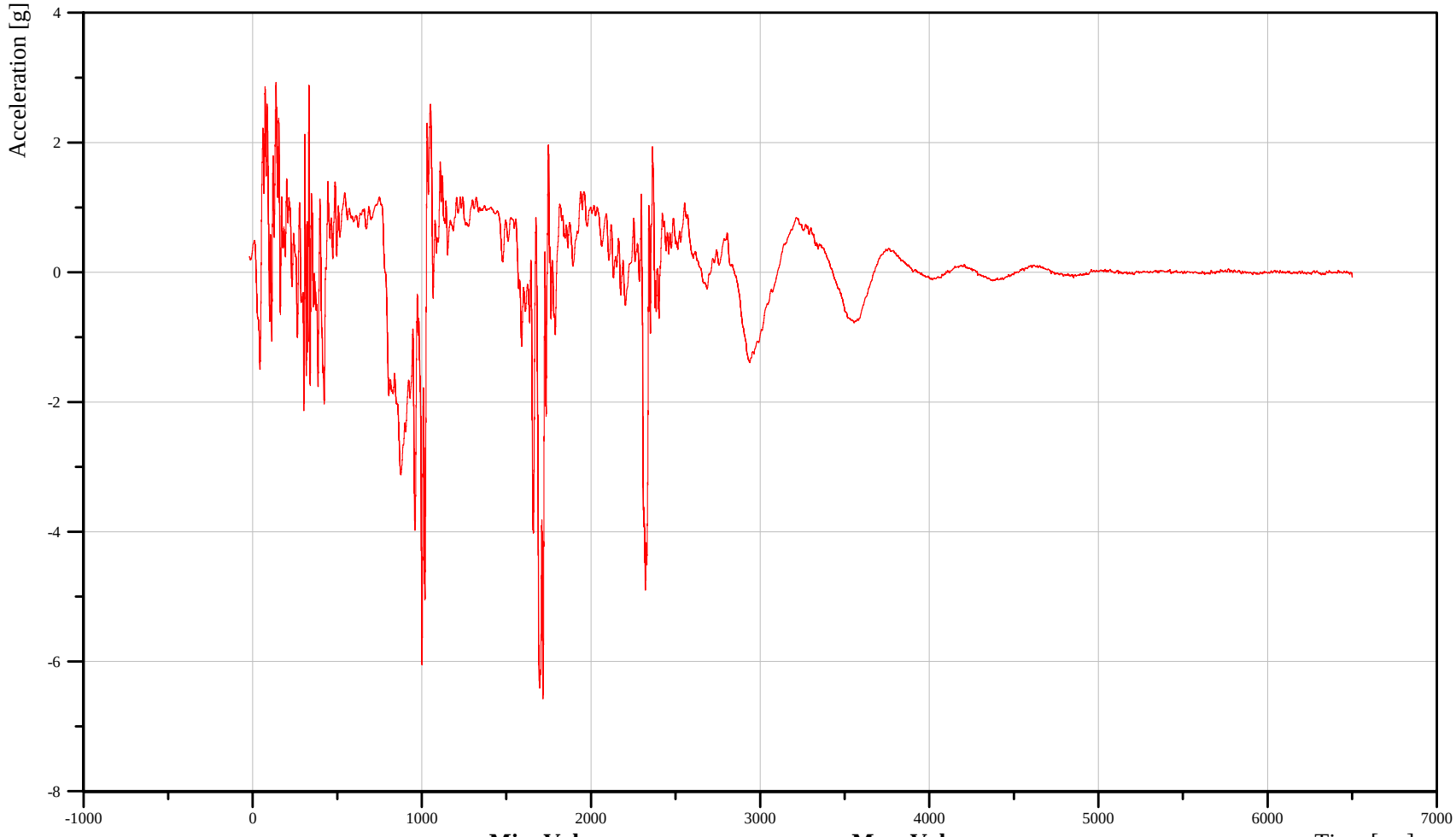
Left D-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLOLE00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-6.57 g at 1,716.16 ms

Max. Value
2.93 g at 137.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

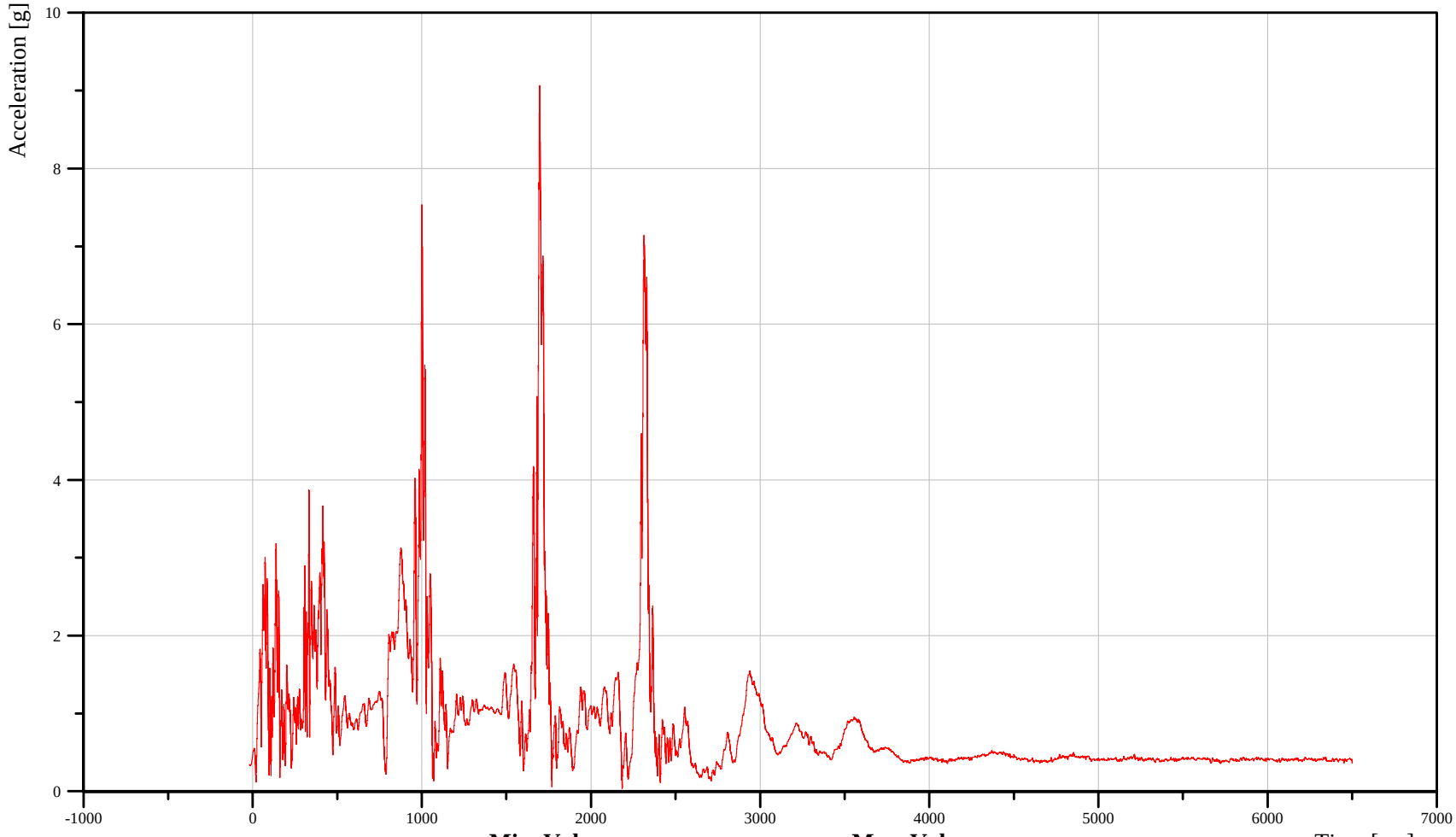
Left D-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLOLE00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.03 g at 2,183.44 ms

Max. Value
9.07 g at 1,695.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

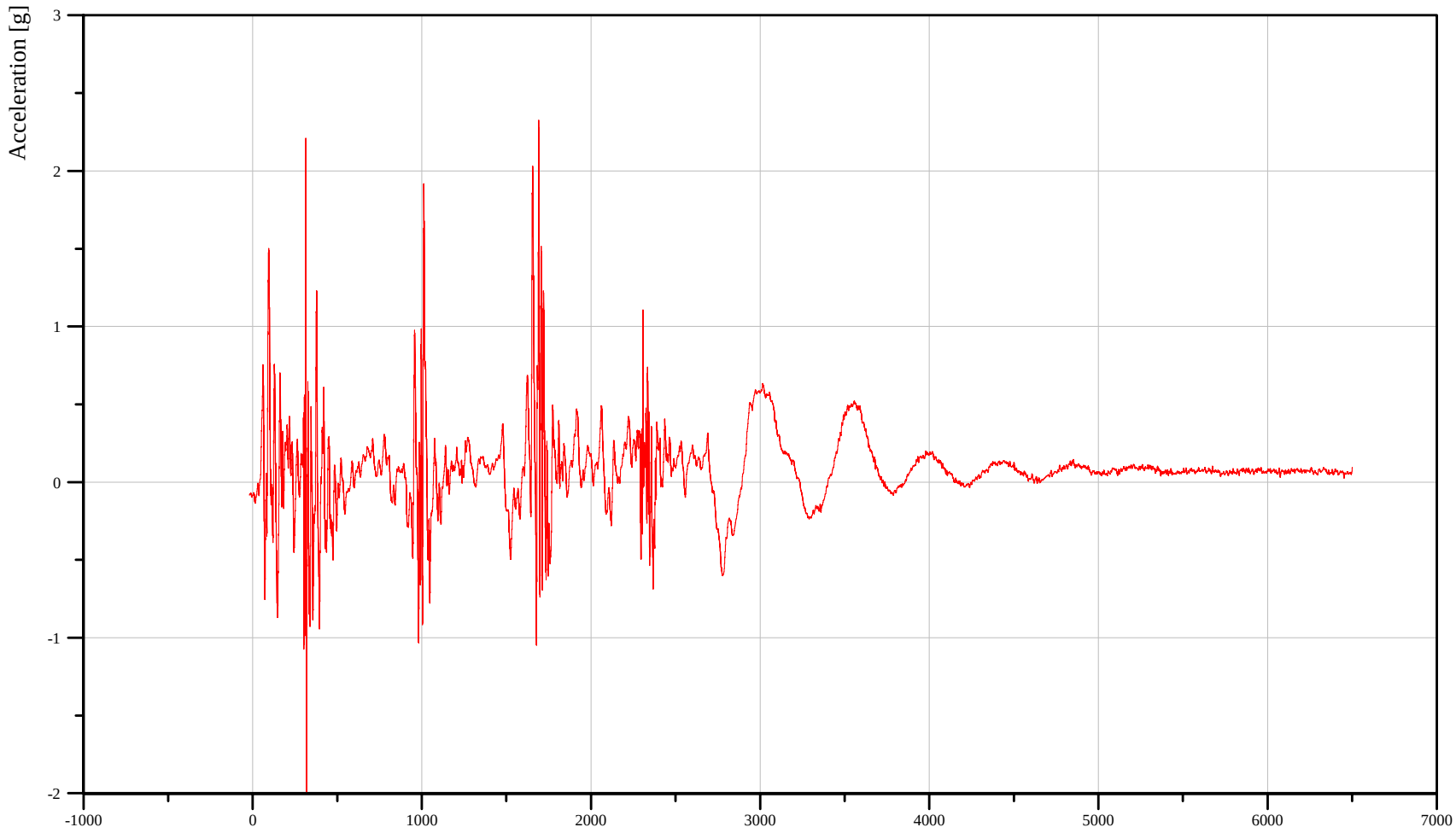
Right D-Pillar Upper X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPRI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.99 g at 317.92 ms

Max. Value
2.33 g at 1,690.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

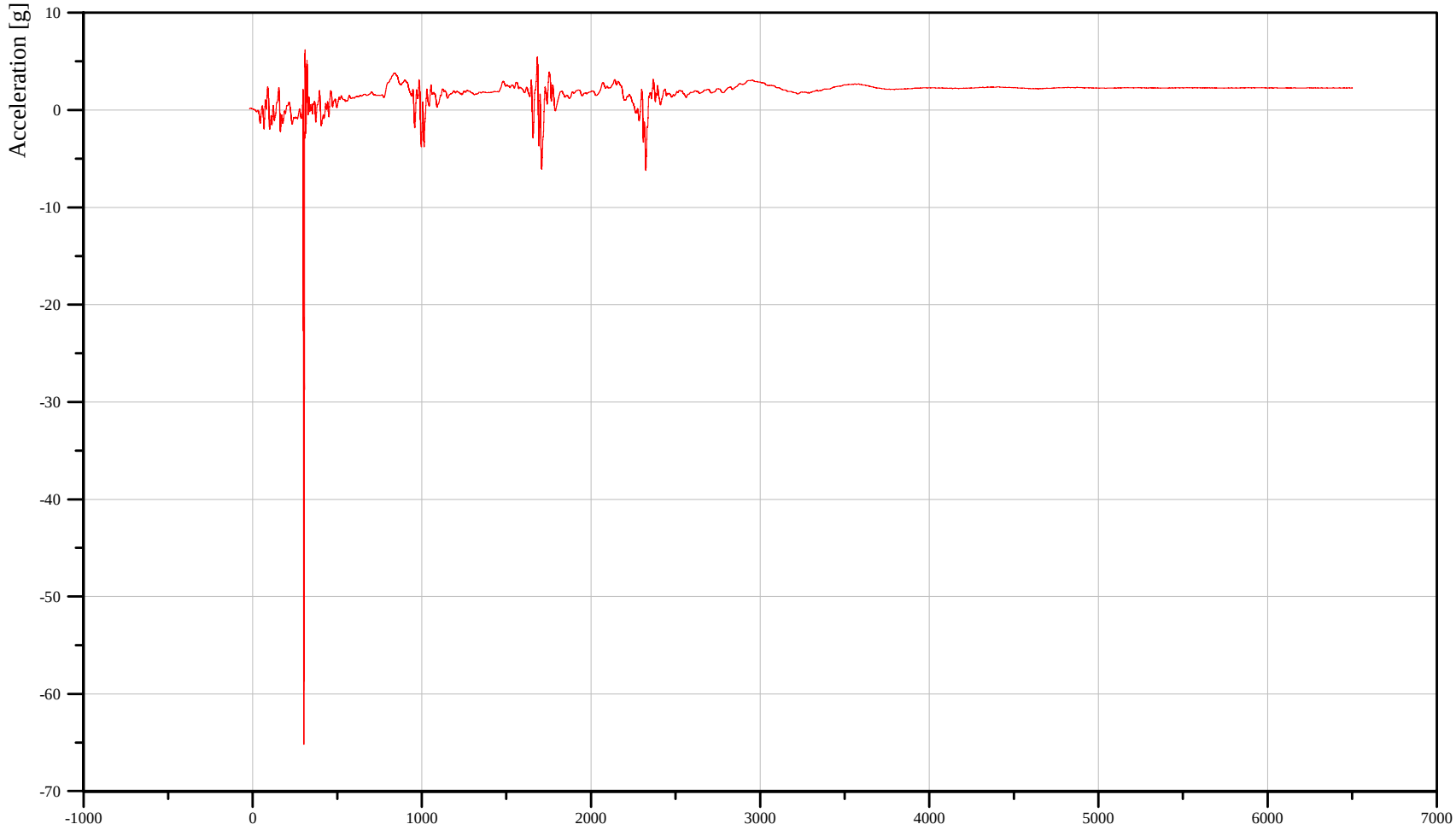
Right D-Pillar Upper Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPRI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-65.18 g at 302.24 ms

Max. Value
6.20 g at 309.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

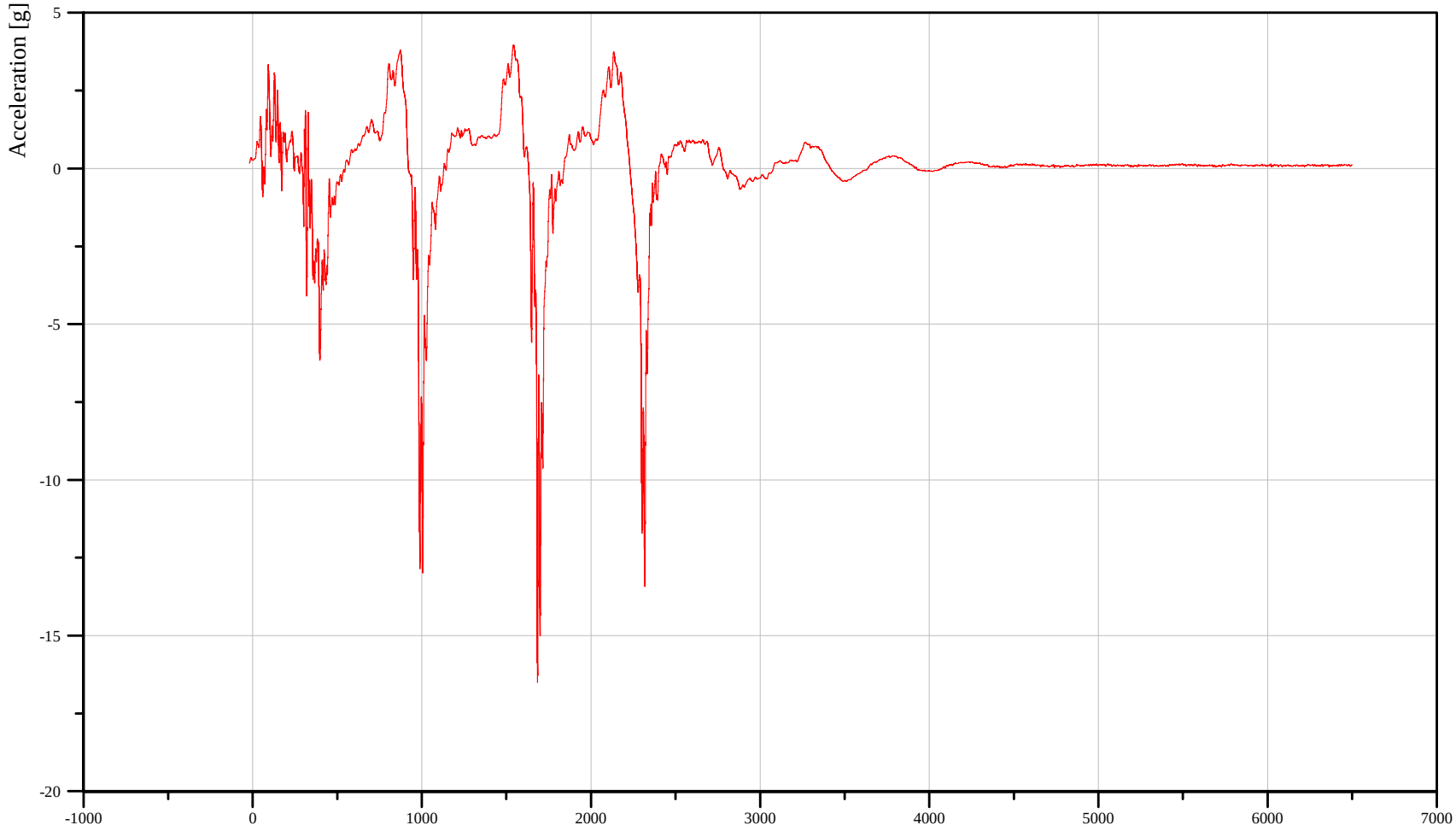
Right D-Pillar Upper Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPRI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-16.51 g at 1,683.84 ms

Max. Value
3.97 g at 1,541.04 ms

FMVSS 208 Rollover 2007 Ford Expedition

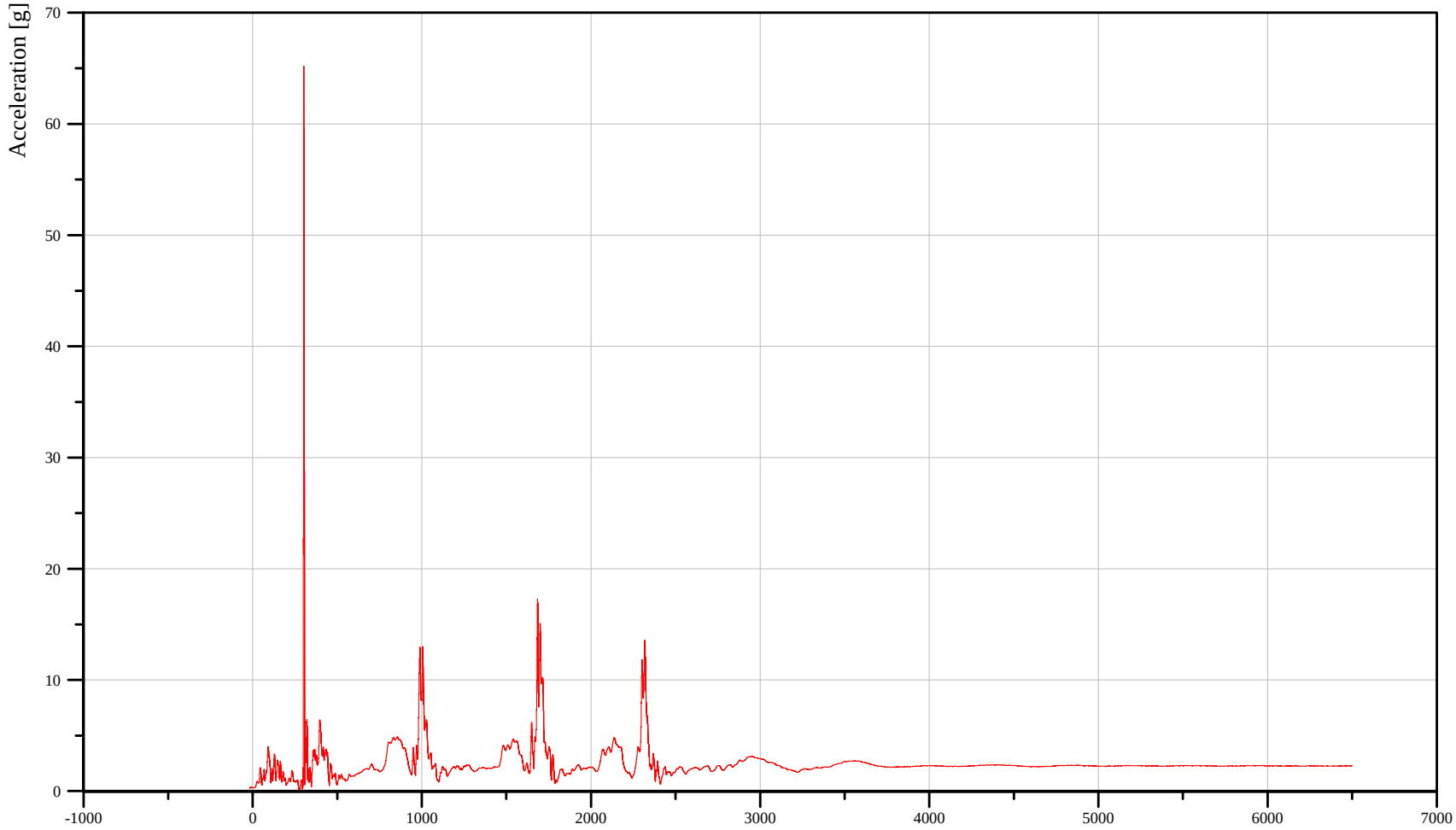
Right D-Pillar Upper Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILUPRI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.11 g at 273.60 ms

Max. Value
65.21 g at 302.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

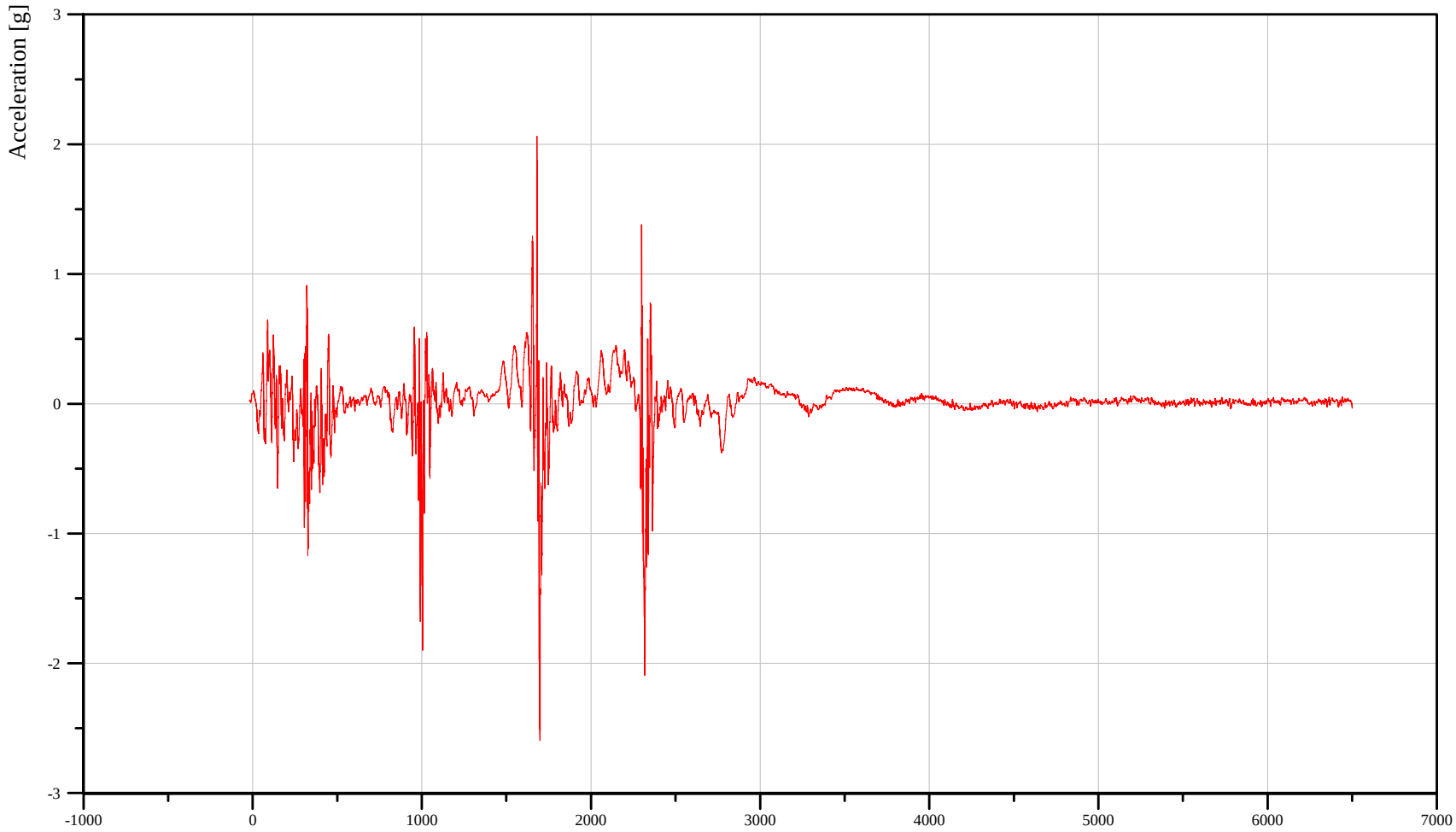
Right D-Pillar Lower X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLORI00ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2.59 g at 1,698.16 ms

Max. Value
2.06 g at 1,680.16 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

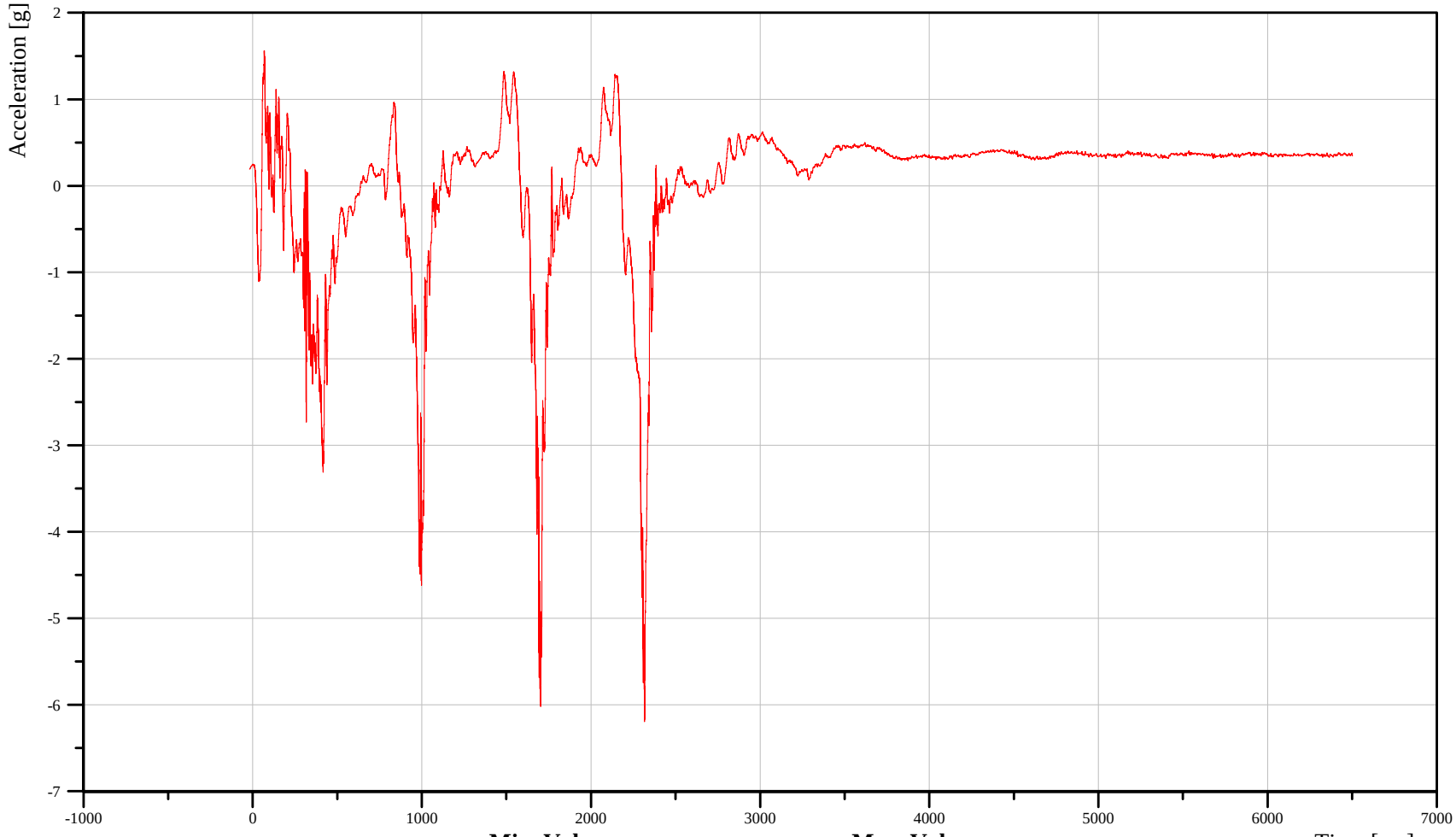
Right D-Pillar Lower Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLORI00ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-6.19 g at 2,316.32 ms

Max. Value
1.56 g at 68.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

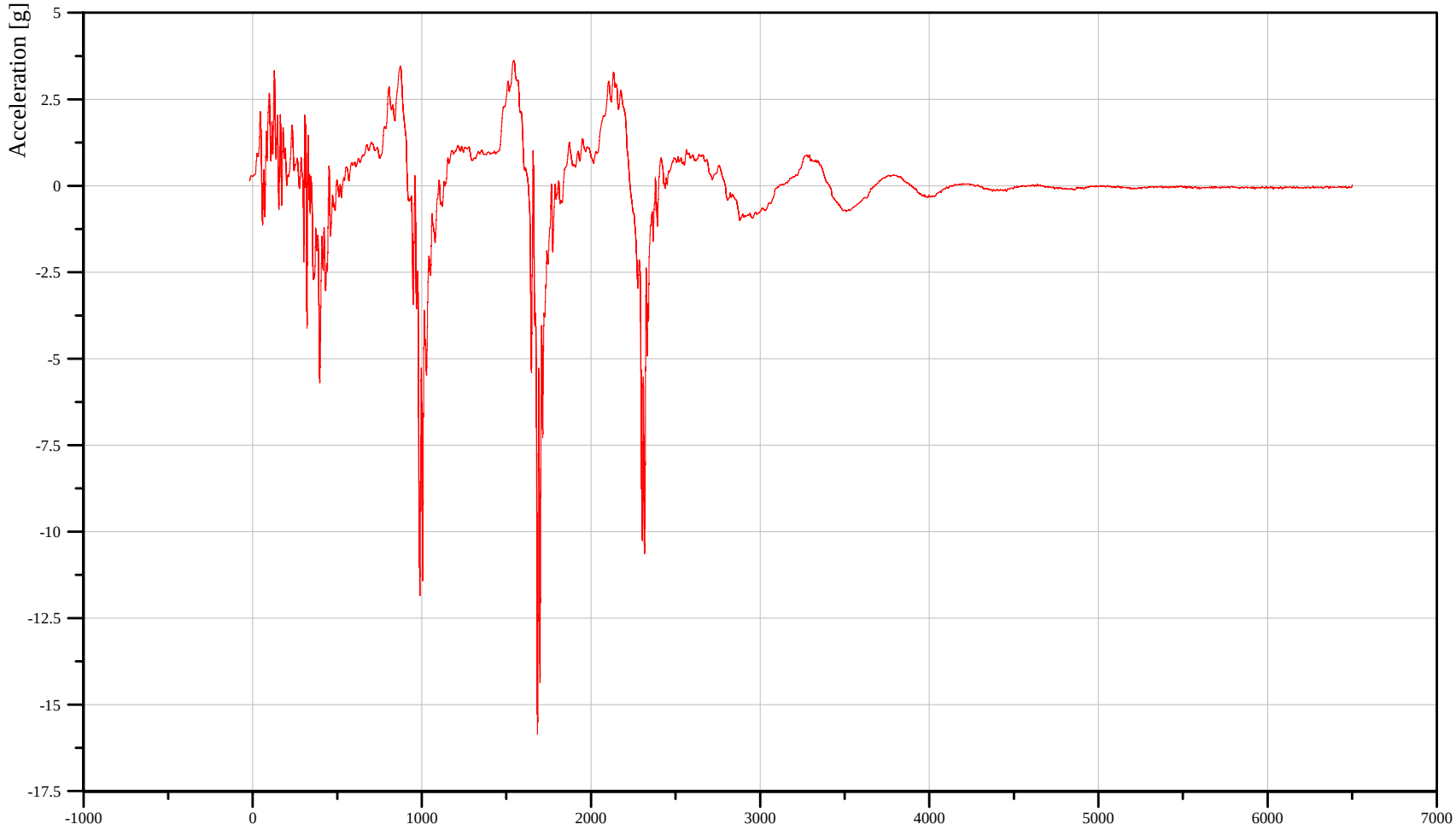
Right D-Pillar Lower Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLORI00ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-15.86 g at 1,683.76 ms

Max. Value
3.62 g at 1,543.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

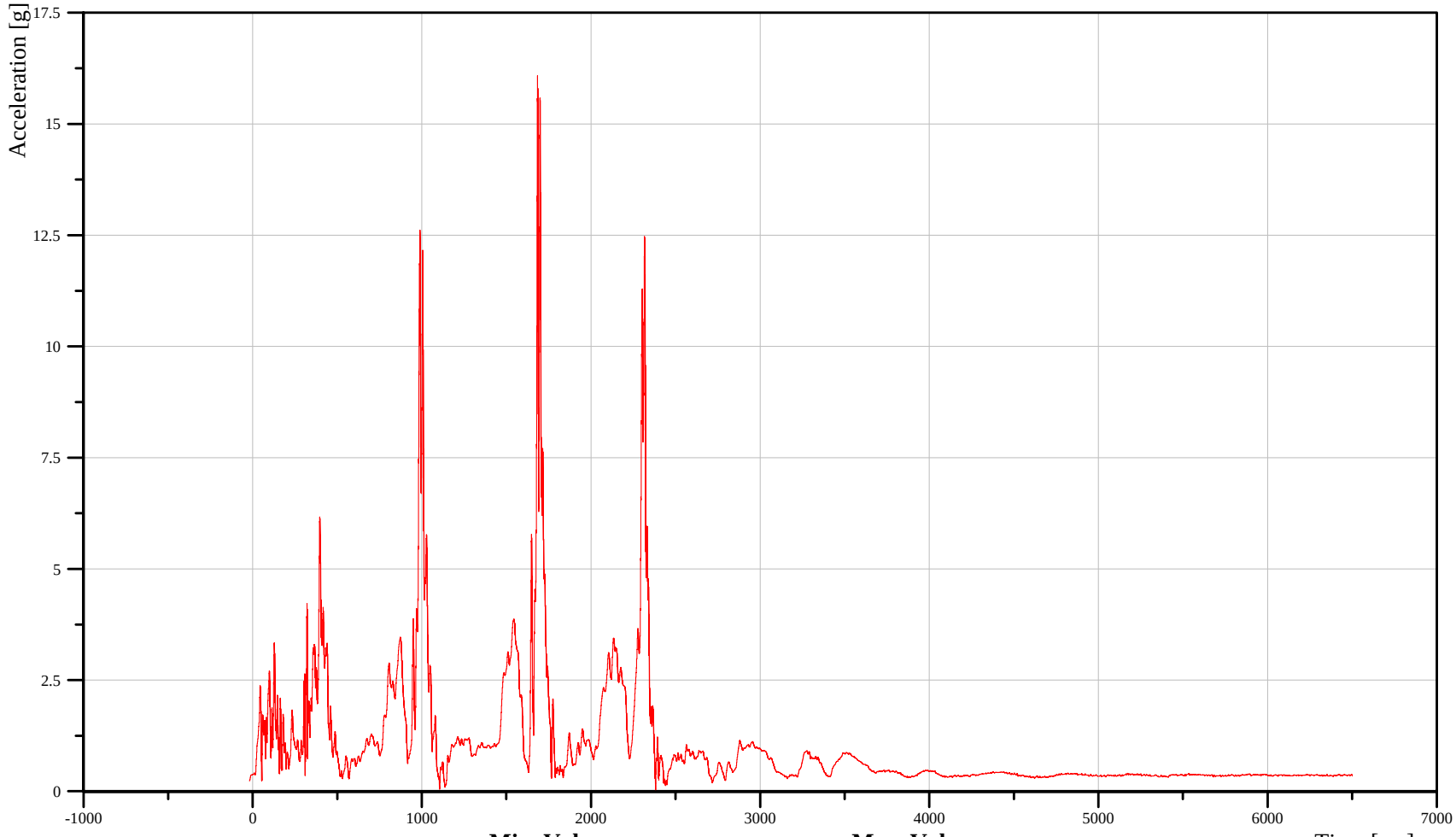
Right D-Pillar Lower Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

10DPILLORI00ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.03 g at 2,381.92 ms

Max. Value
16.09 g at 1,683.76 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

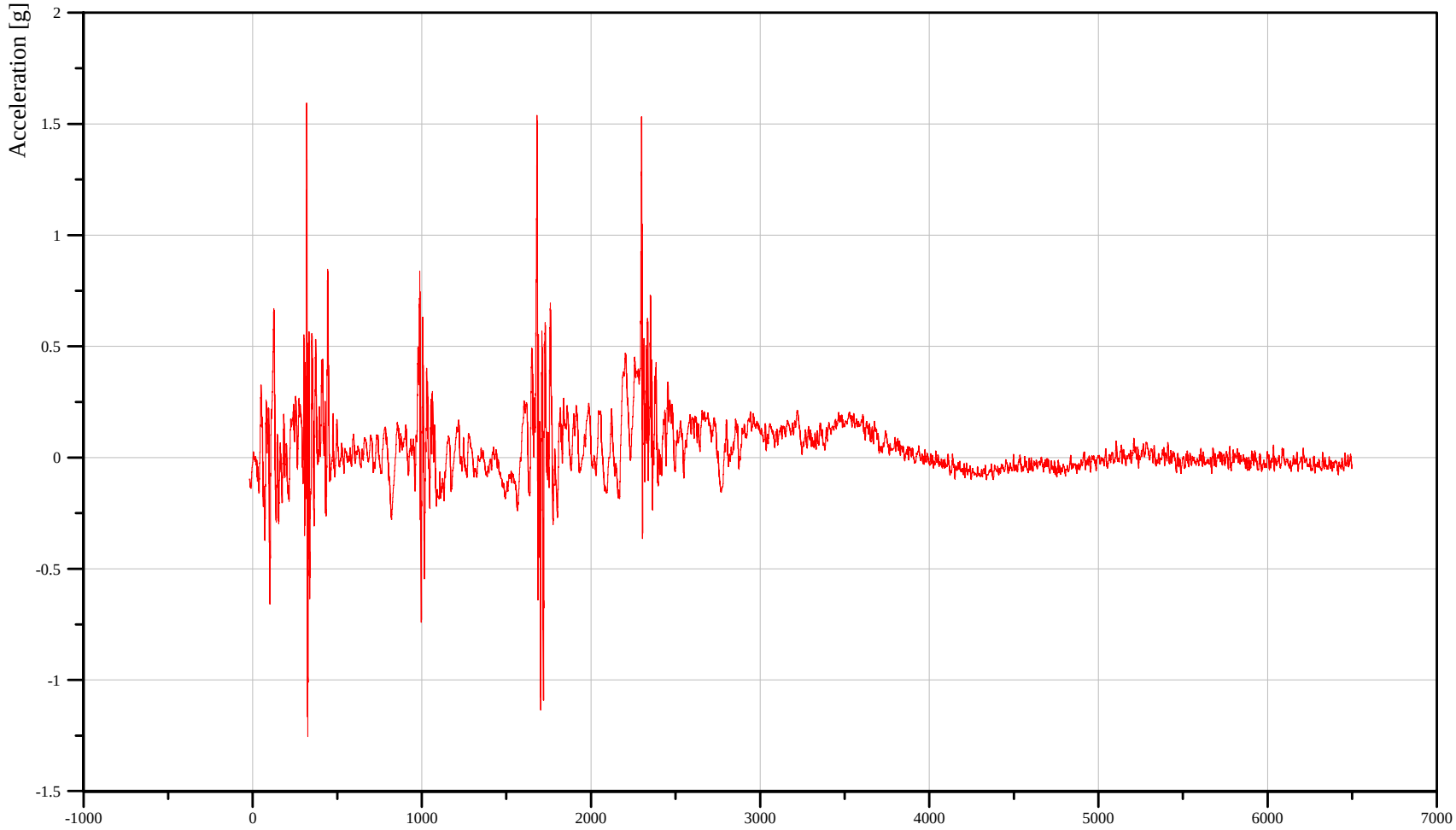
Vehicle Rear Deck X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

102RDK000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-1.25 g at 325.44 ms

Max. Value
1.59 g at 318.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

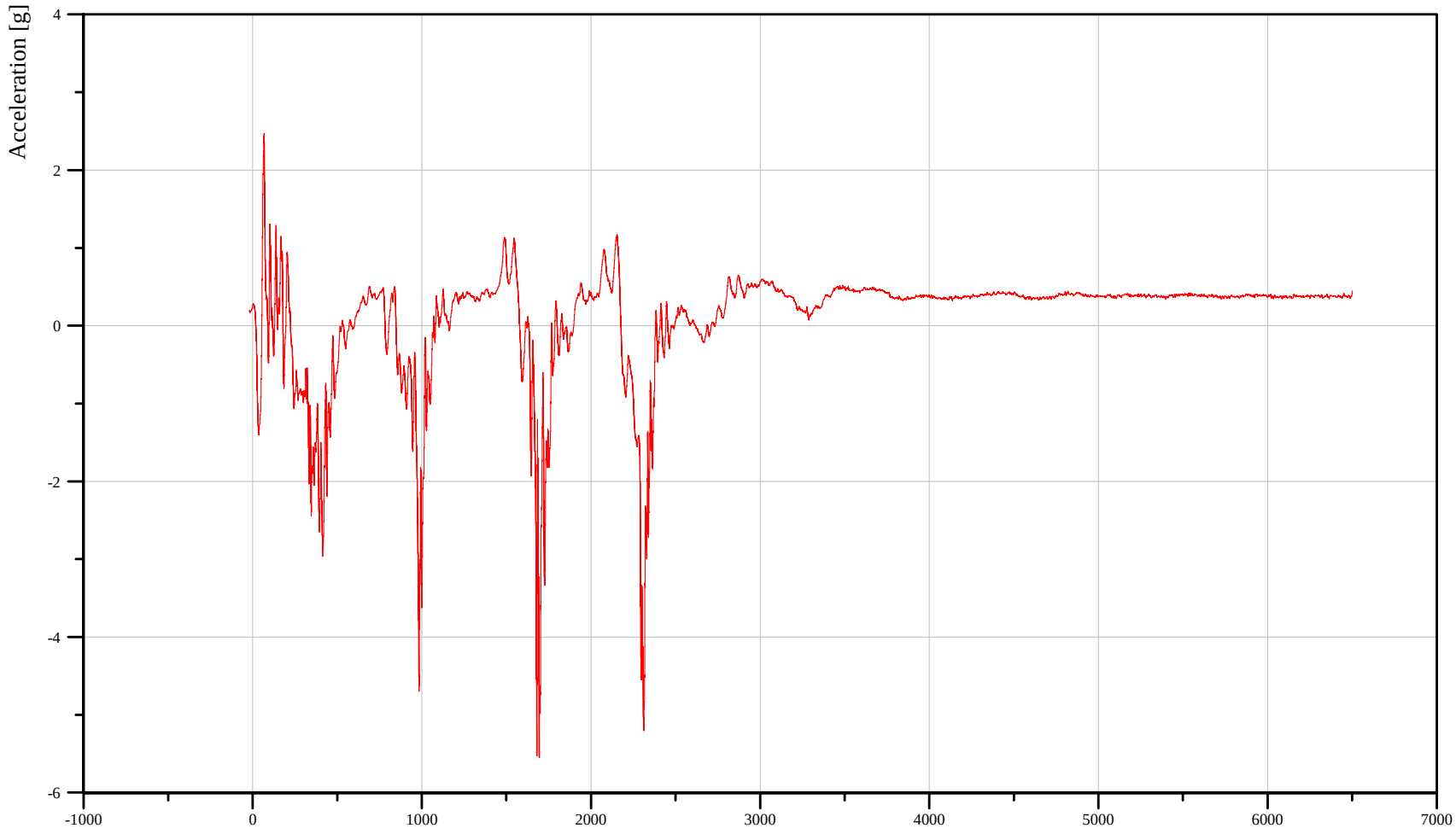
Vehicle Rear Deck Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

102RDK000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-5.55 g at 1,693.68 ms

Max. Value
2.47 g at 66.96 ms

FMVSS 208 Rollover 2007 Ford Expedition

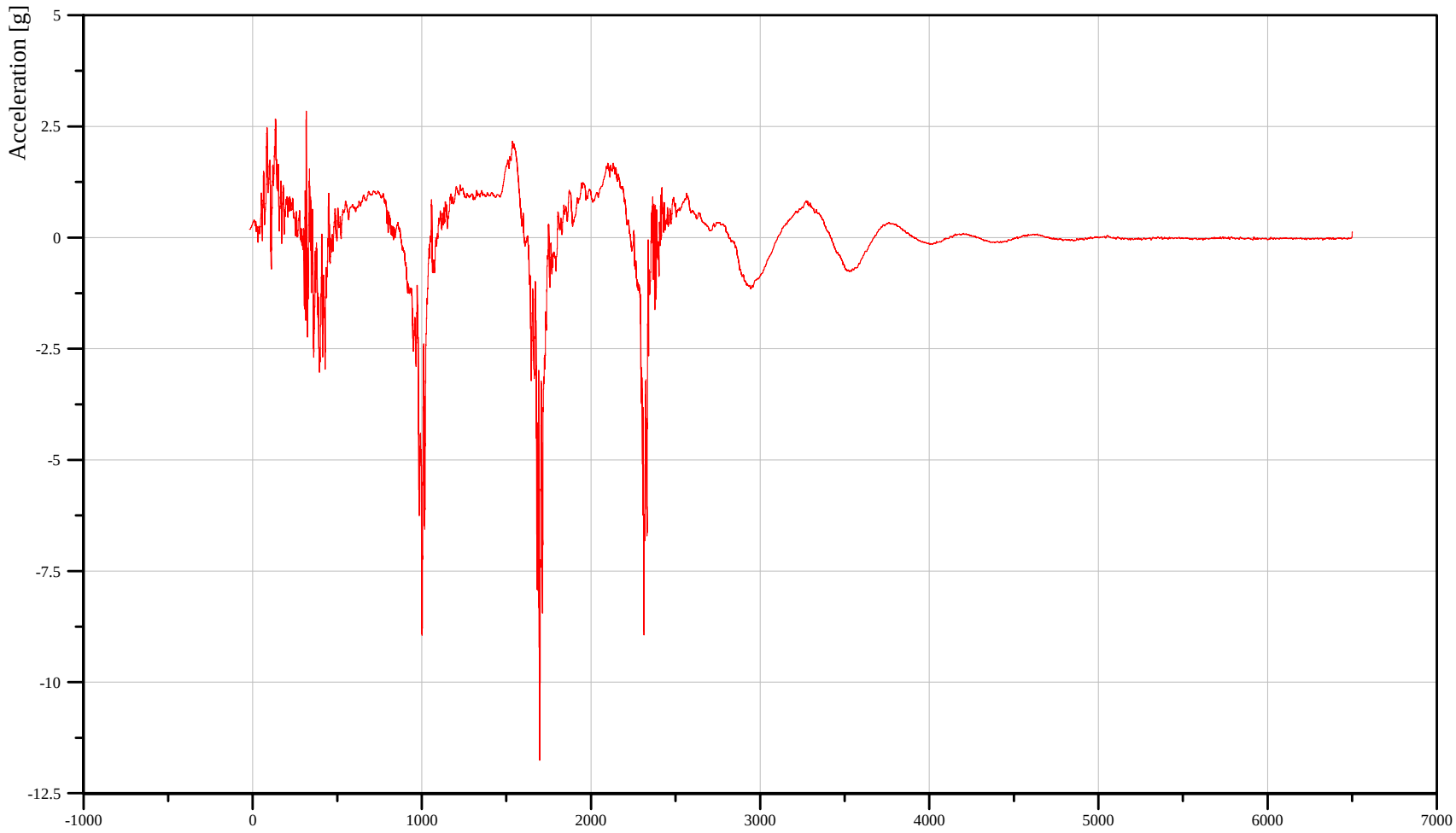
Vehicle Rear Deck Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

102RDK000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-11.76 g at 1,696.48 ms

Max. Value
2.85 g at 316.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

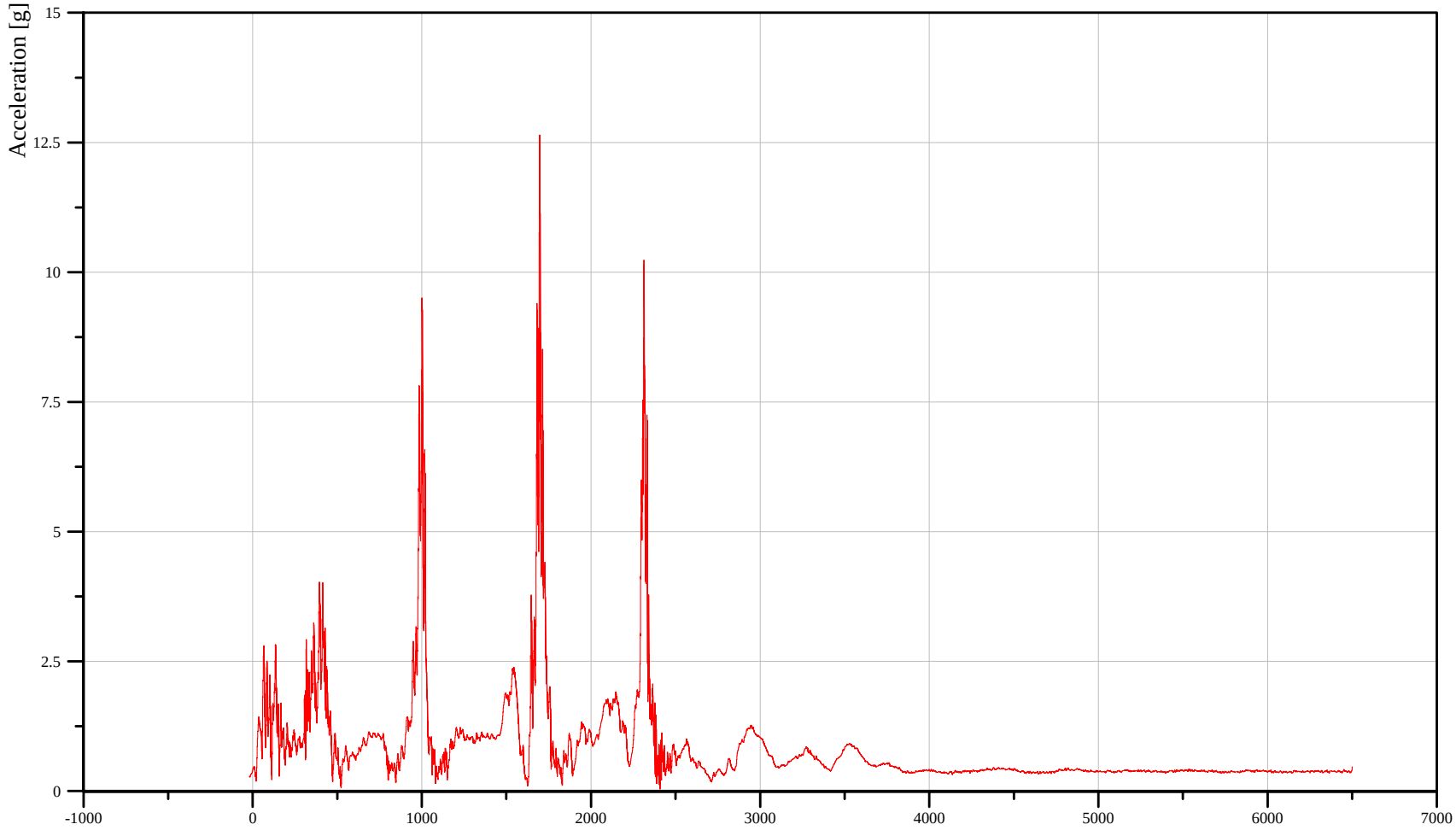
Vehicle Rear Deck Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

102RDK000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.04 g at 2,406.88 ms

Max. Value
12.64 g at 1,696.48 ms

FMVSS 208 Rollover 2007 Ford Expedition

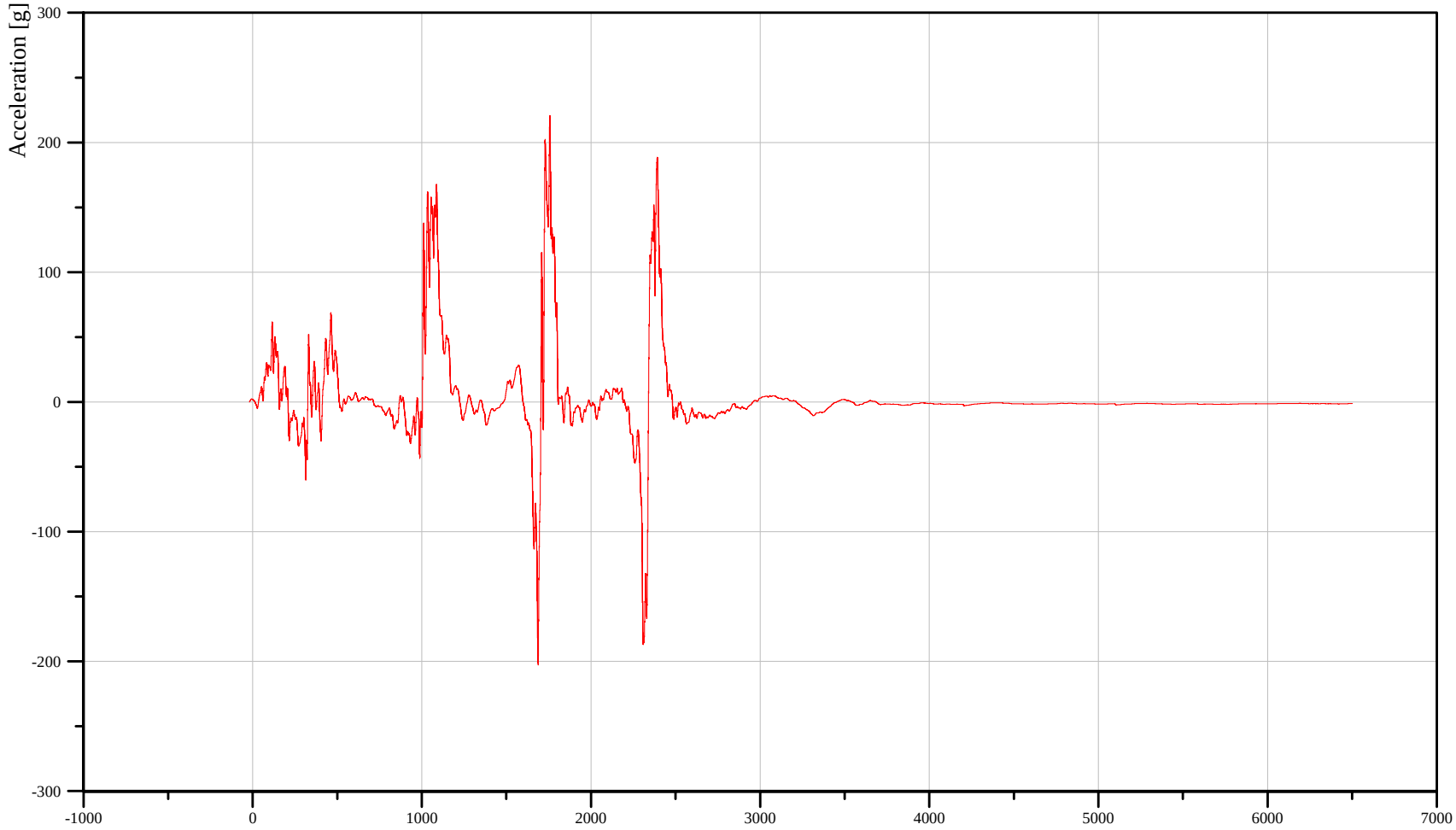
LF Seat Position (on floor) X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEAT000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-202.71 g at 1,686.88 ms

Max. Value
220.74 g at 1,756.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

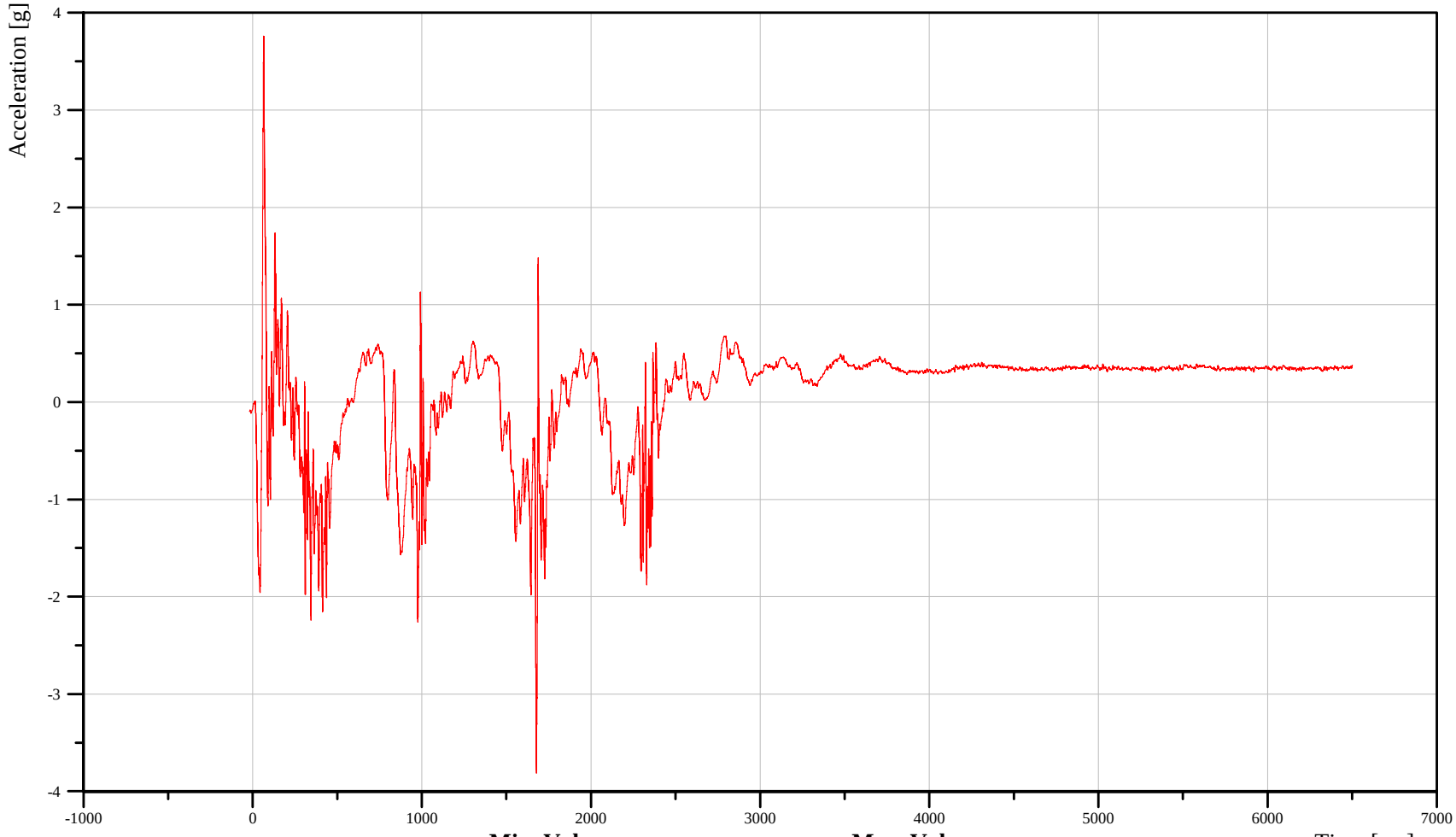
LF Seat Position (on floor) Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEAT000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3.81 g at 1,676.88 ms

Max. Value
3.76 g at 64.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

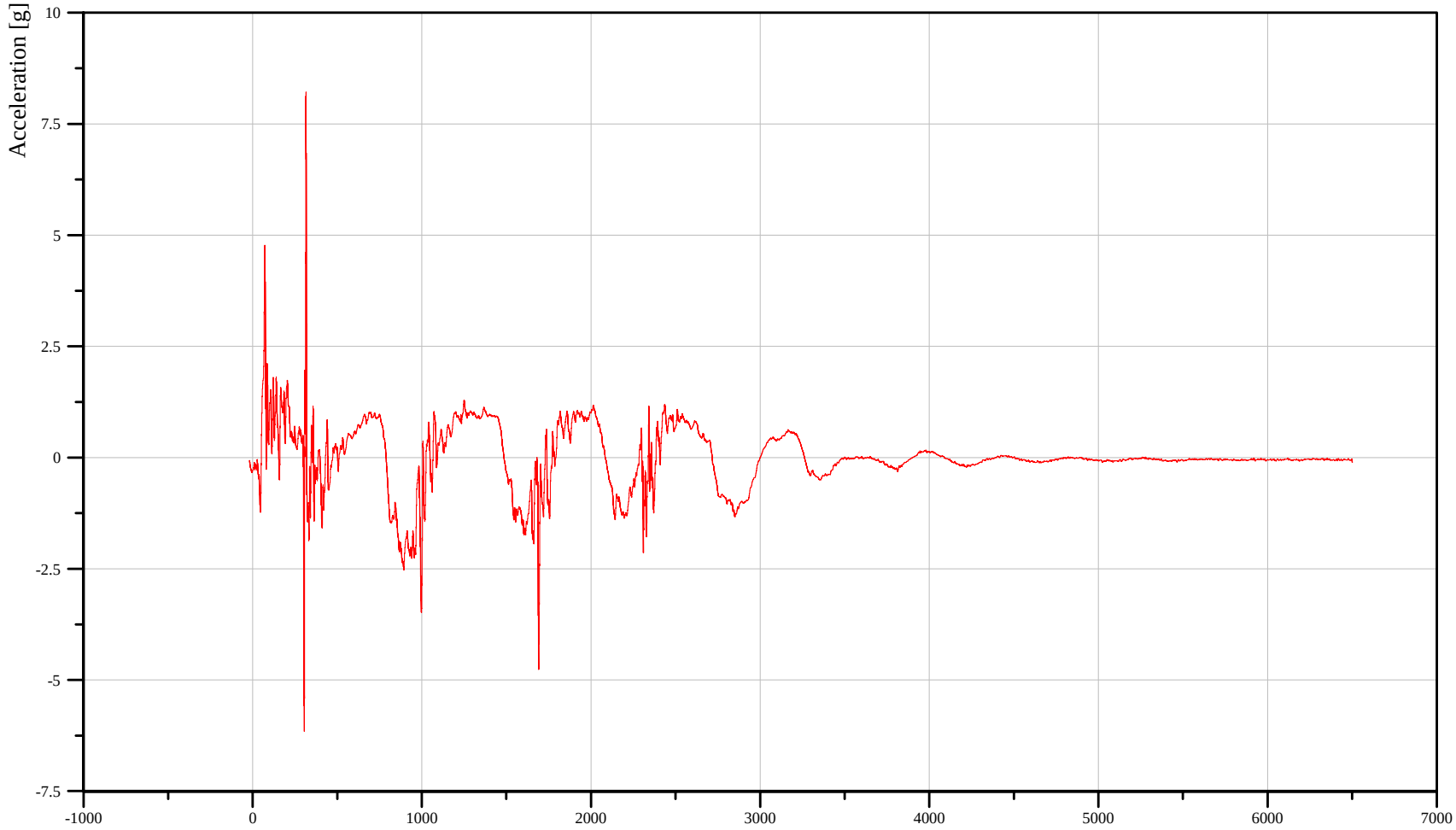
LF Seat Position (on floor) Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEAT000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-6.16 g at 304.16 ms

Max. Value
8.22 g at 314.40 ms

FMVSS 208 Rollover 2007 Ford Expedition

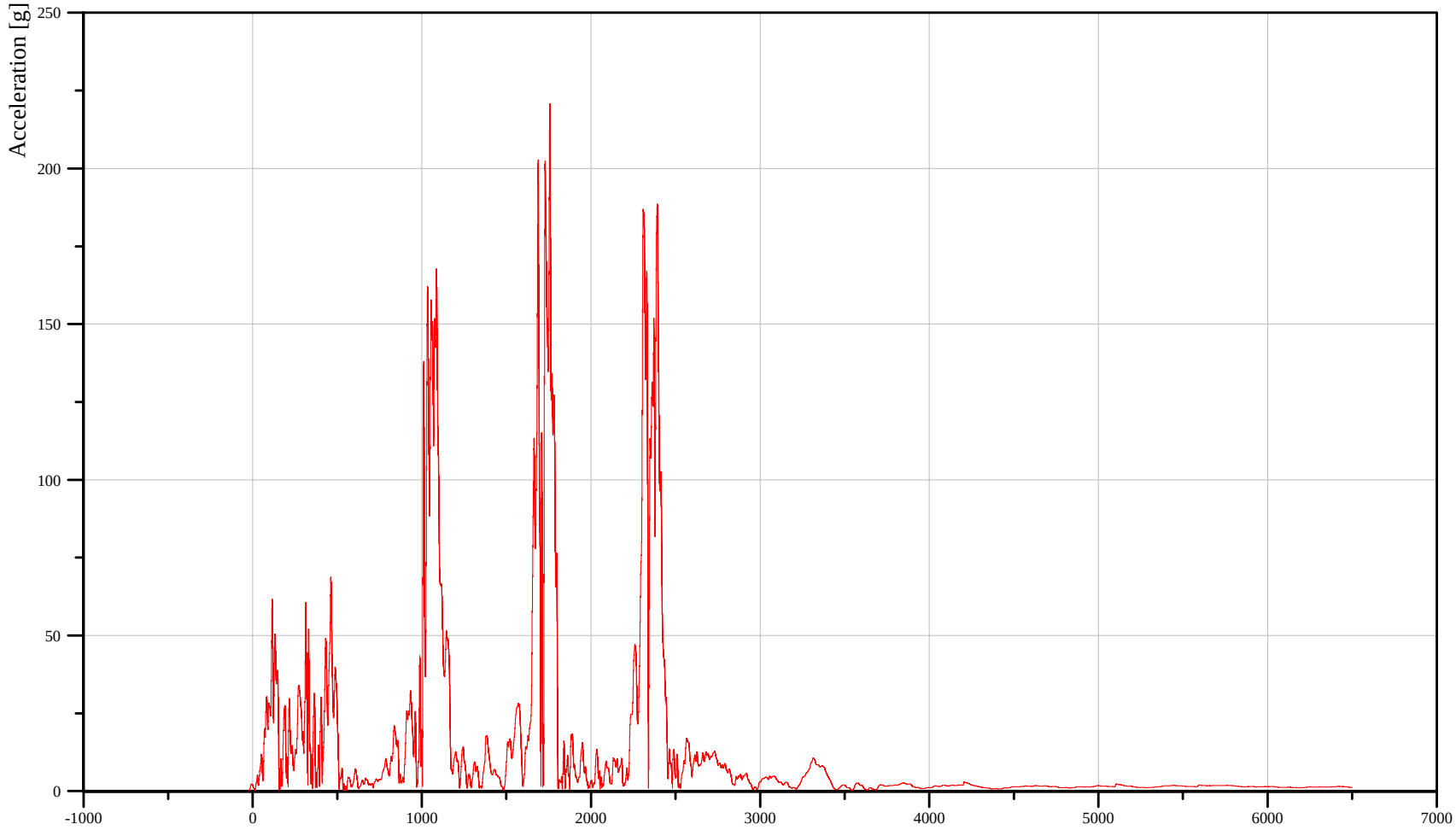
LF Seat Position (on floor) Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEAT000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.13 g at -20.00 ms

Max. Value
220.75 g at 1,756.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

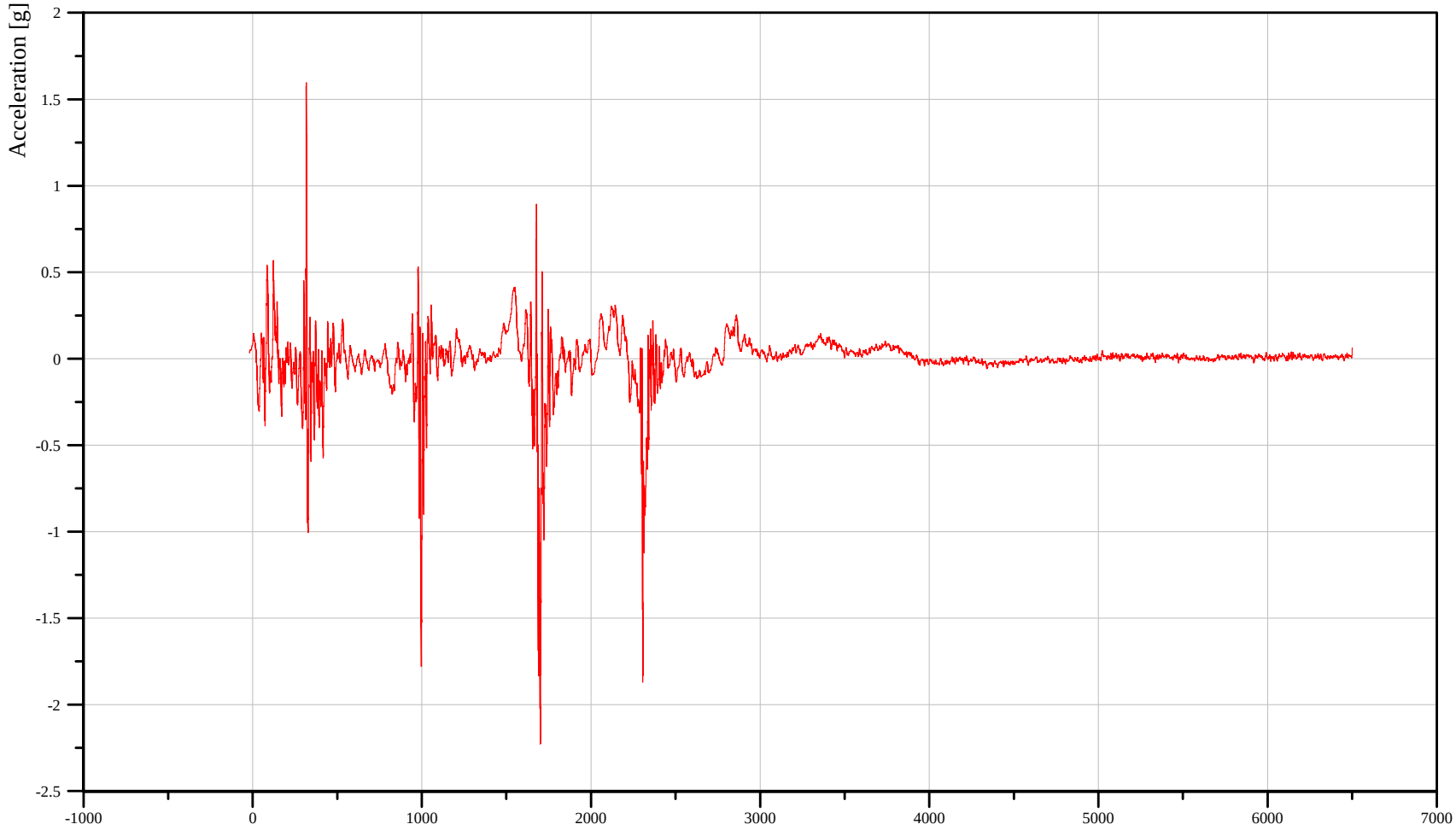
RF Seat Position (on floor) X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEAT000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2.23 g at 1,700.48 ms

Max. Value
1.60 g at 316.24 ms

FMVSS 208 Rollover 2007 Ford Expedition

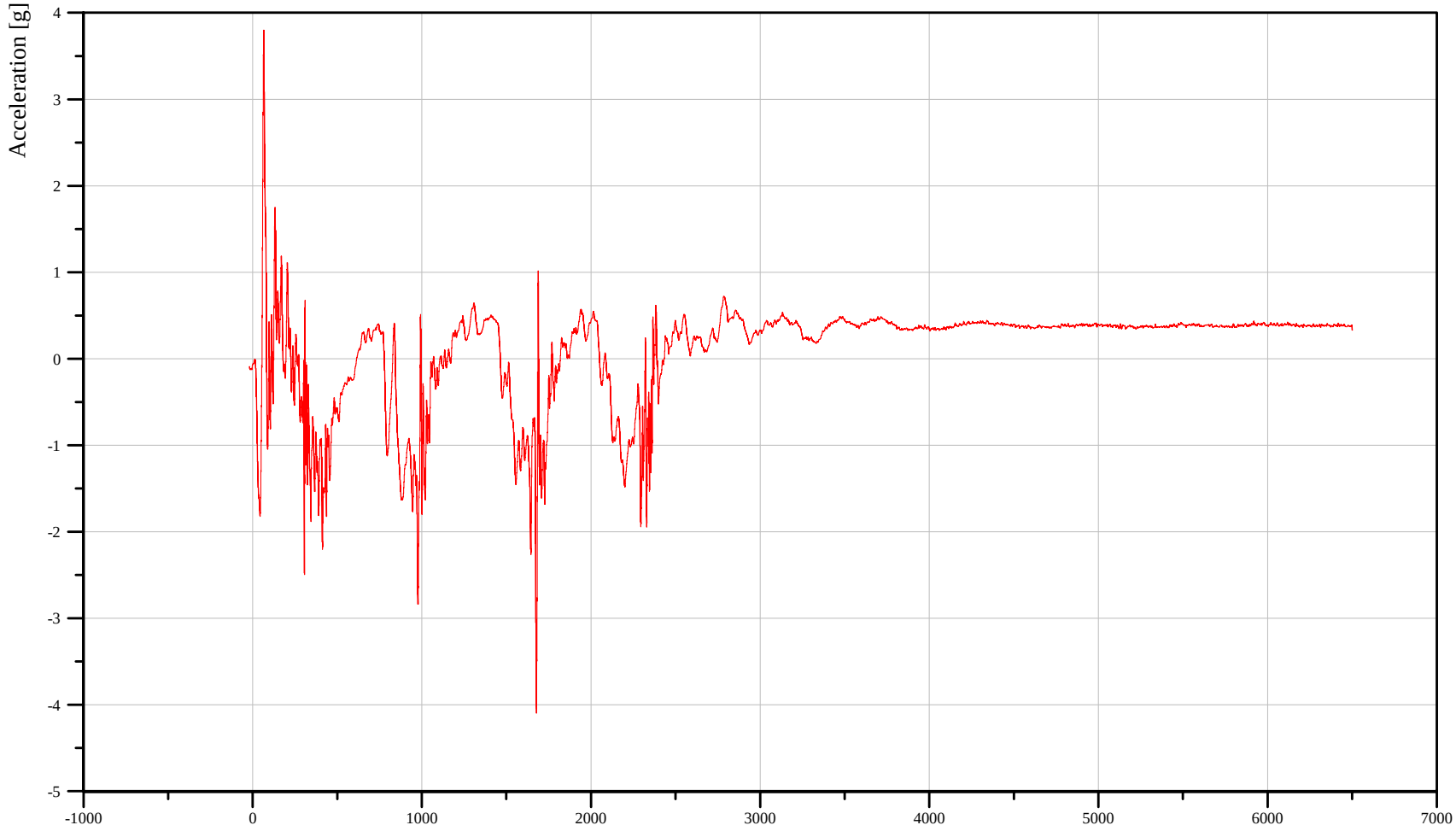
RF Seat Position (on floor) Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEAT000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.10 g at 1,676.72 ms

Max. Value
3.80 g at 64.56 ms

FMVSS 208 Rollover 2007 Ford Expedition

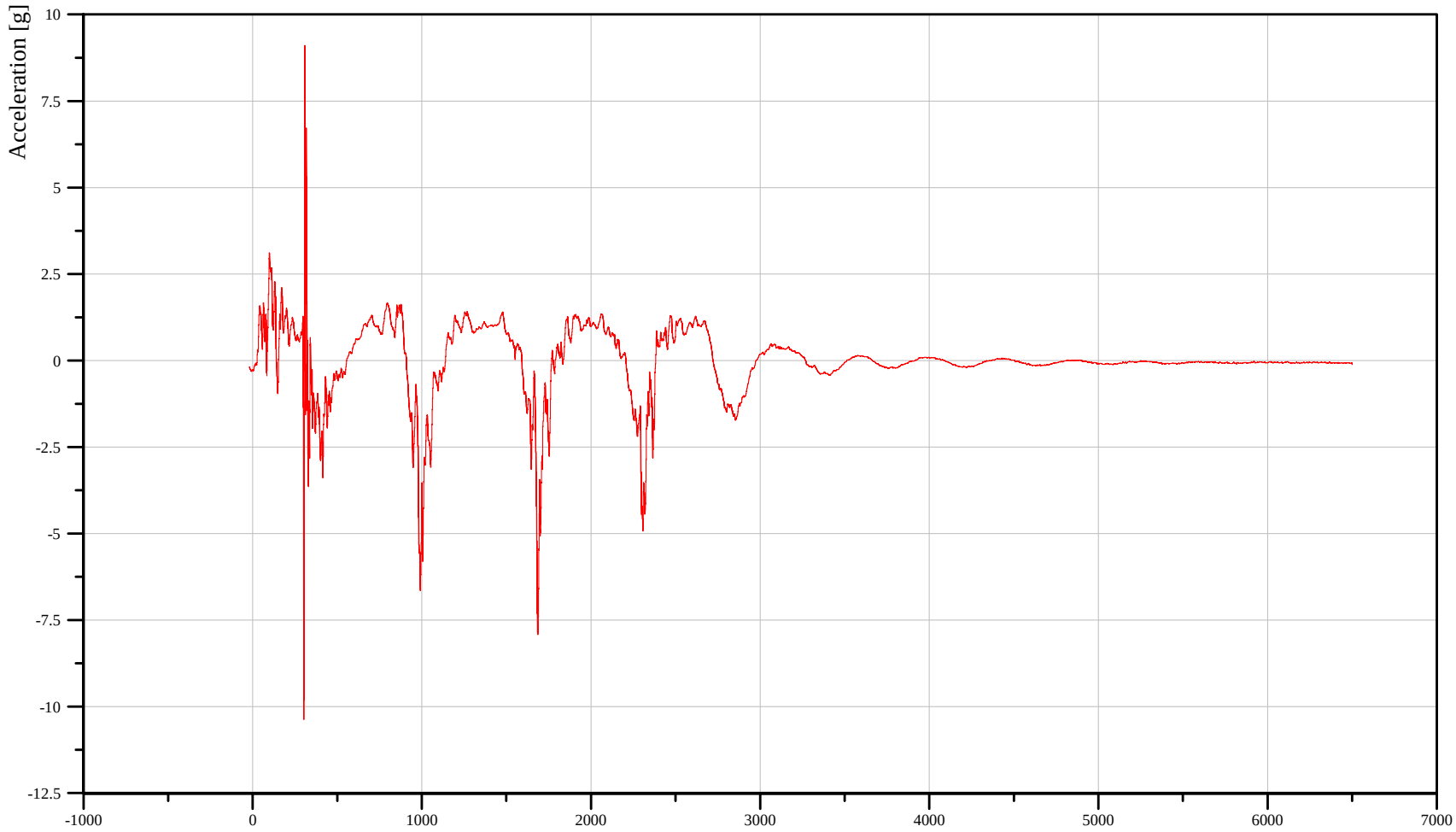
RF Seat Position (on floor) Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEAT000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-10.37 g at 302.80 ms

Max. Value
9.11 g at 307.20 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

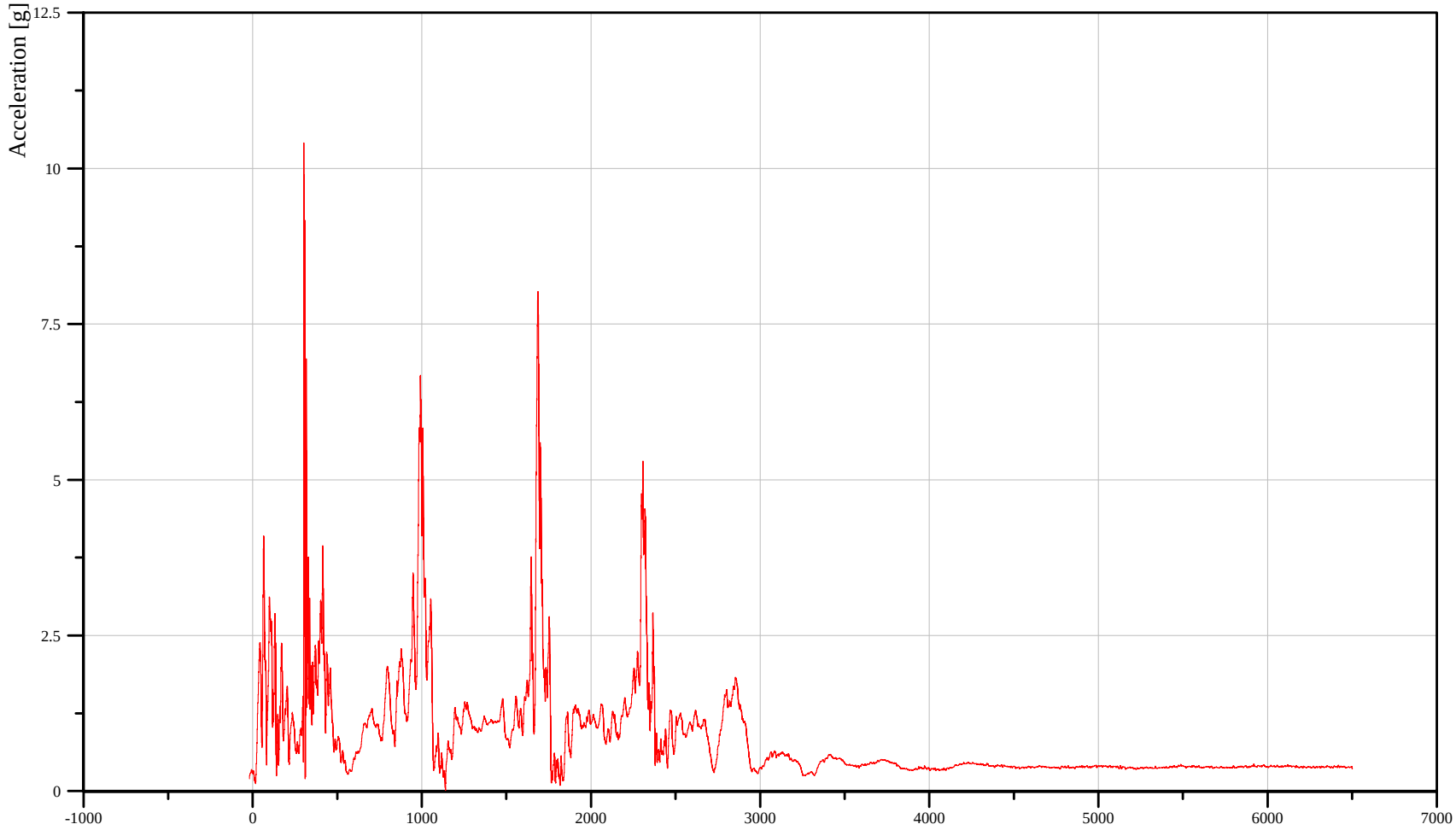
RF Seat Position (on floor) Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEAT000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.01 g at 1,139.12 ms

Max. Value
10.41 g at 302.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

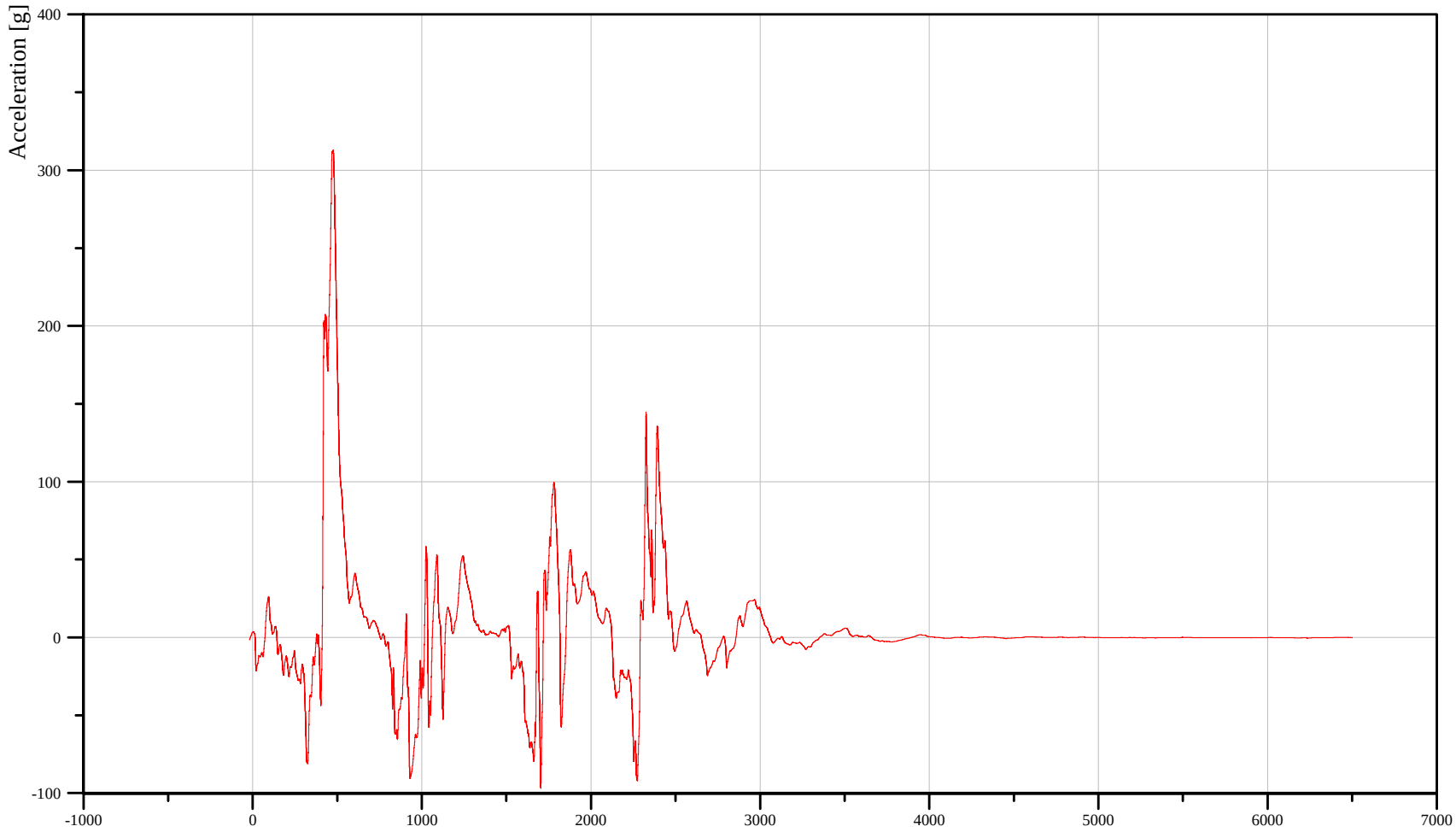
LR Seat Position (on floor) X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEAT000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-96.90 g at 1,702.88 ms

Max. Value
312.98 g at 475.60 ms

FMVSS 208 Rollover 2007 Ford Expedition

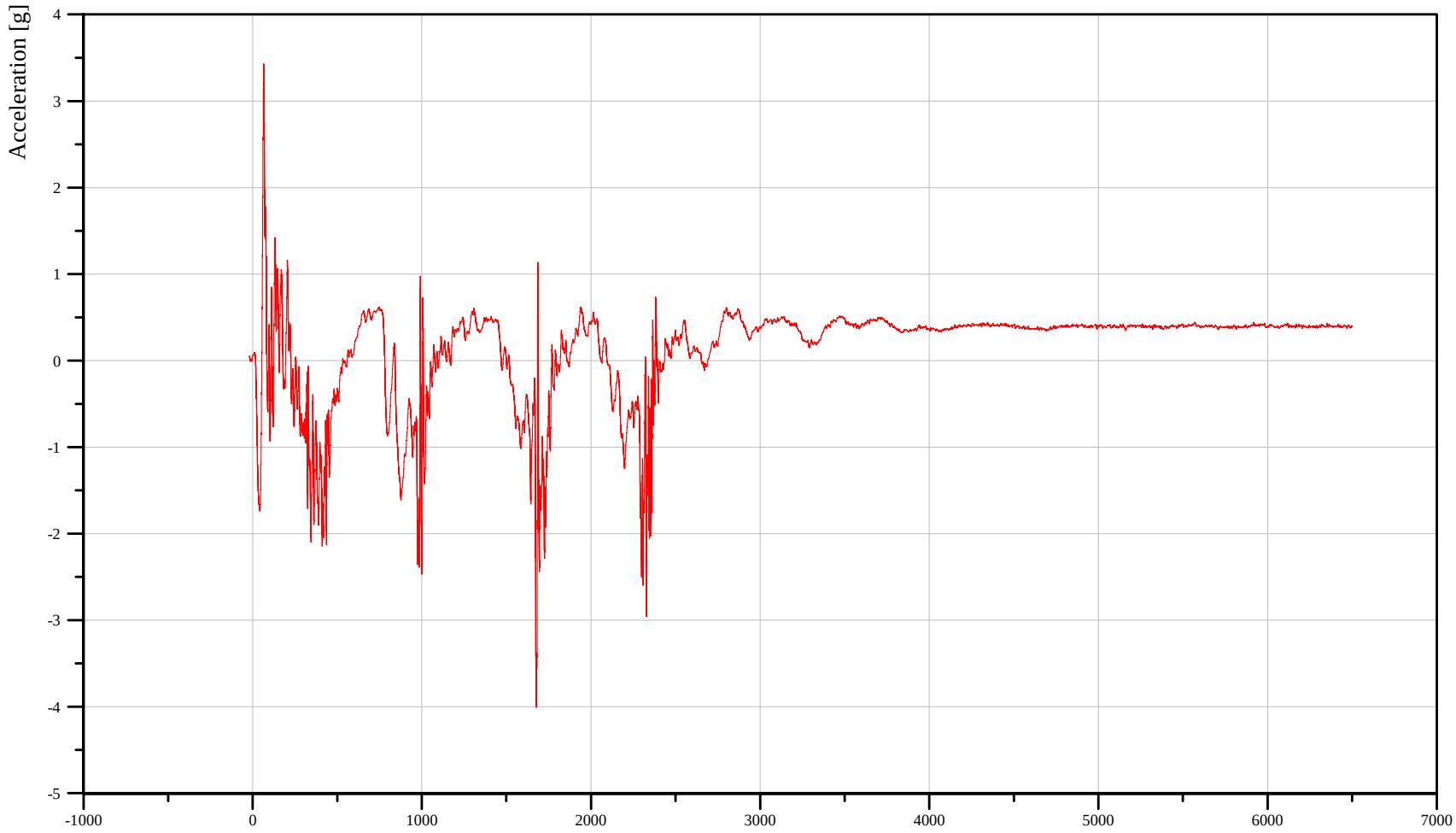
LR Seat Position (on floor) Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEAT000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.01 g at 1,675.68 ms

Max. Value
3.43 g at 64.64 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

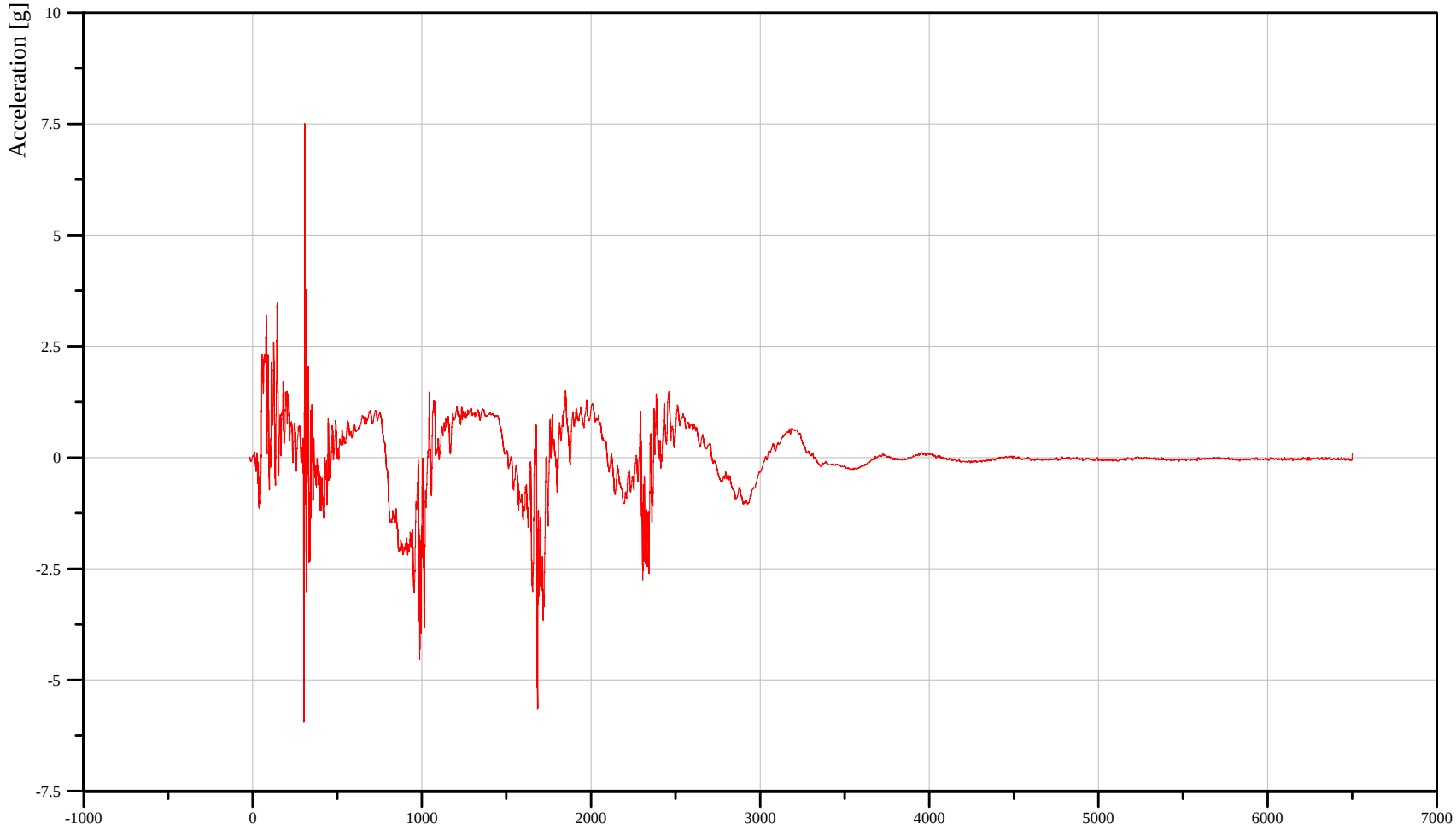
LR Seat Position (on floor) Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEAT000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-5.96 g at 303.20 ms

Max. Value
7.51 g at 306.80 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

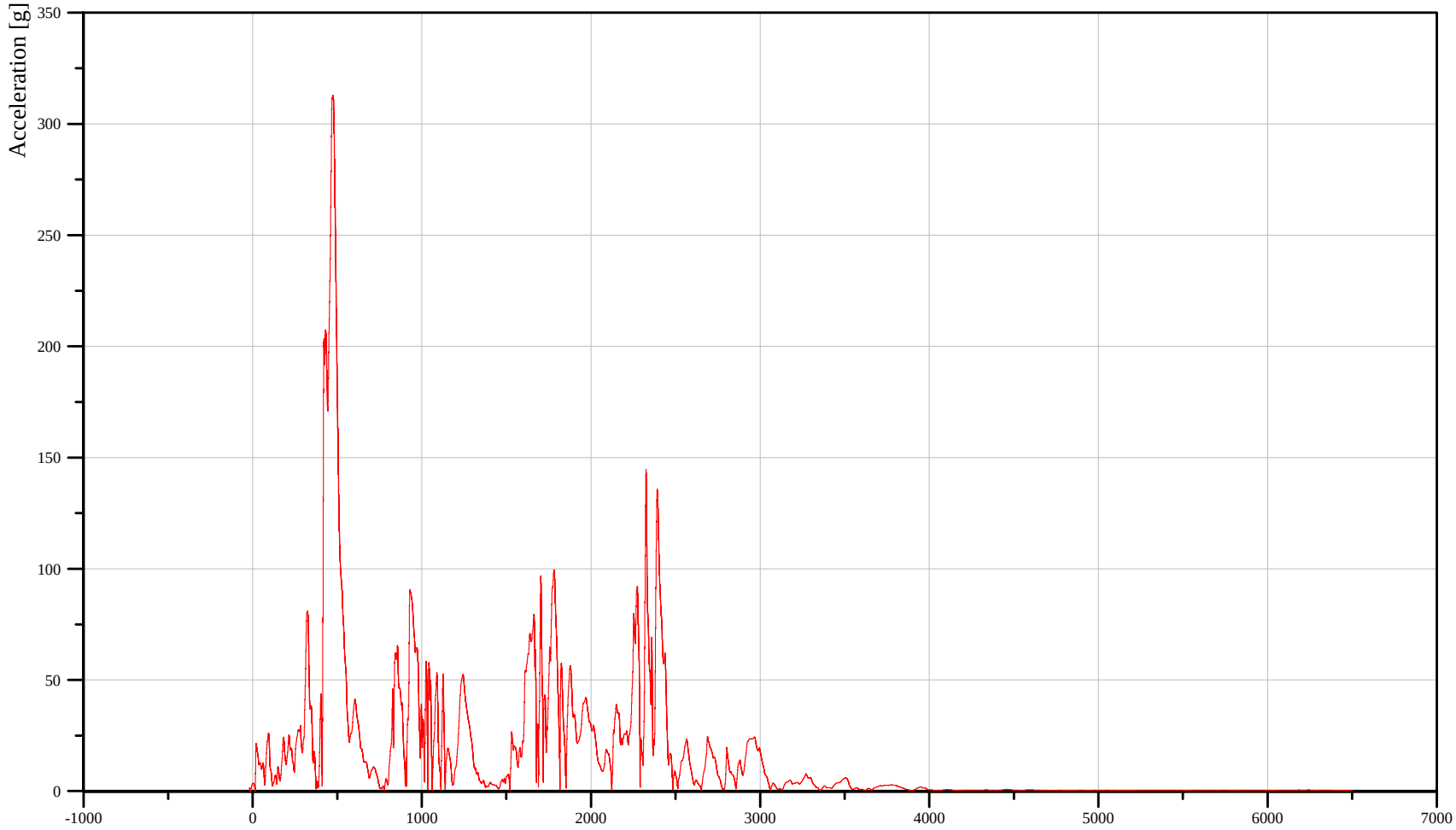
LR Seat Position (on floor) Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEAT000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.03 g at -14.88 ms

Max. Value
312.98 g at 475.60 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

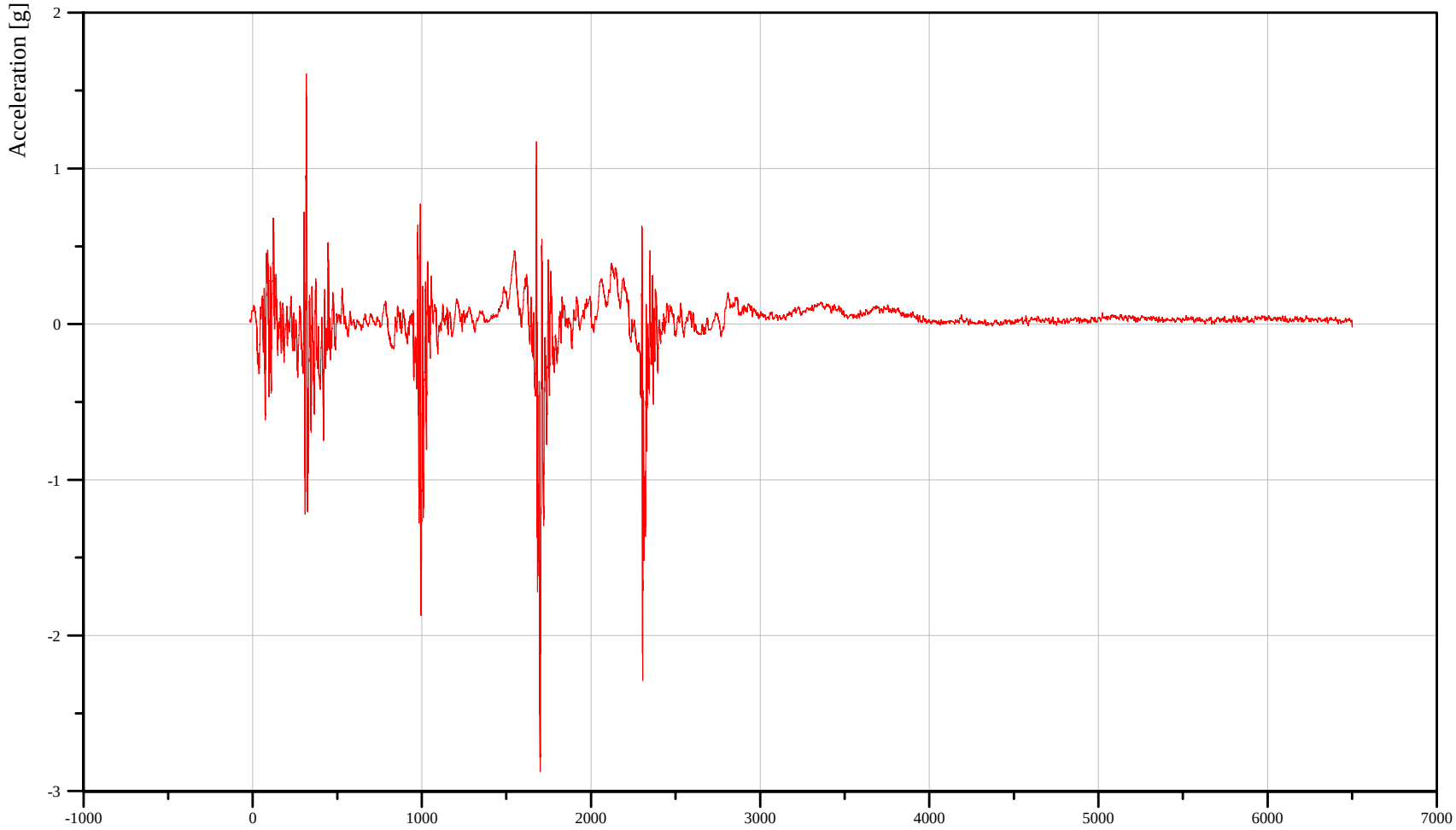
RR Seat Position (on floor) X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

16SEAT000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-2.88 g at 1,699.84 ms

Max. Value
1.61 g at 316.72 ms

FMVSS 208 Rollover 2007 Ford Expedition

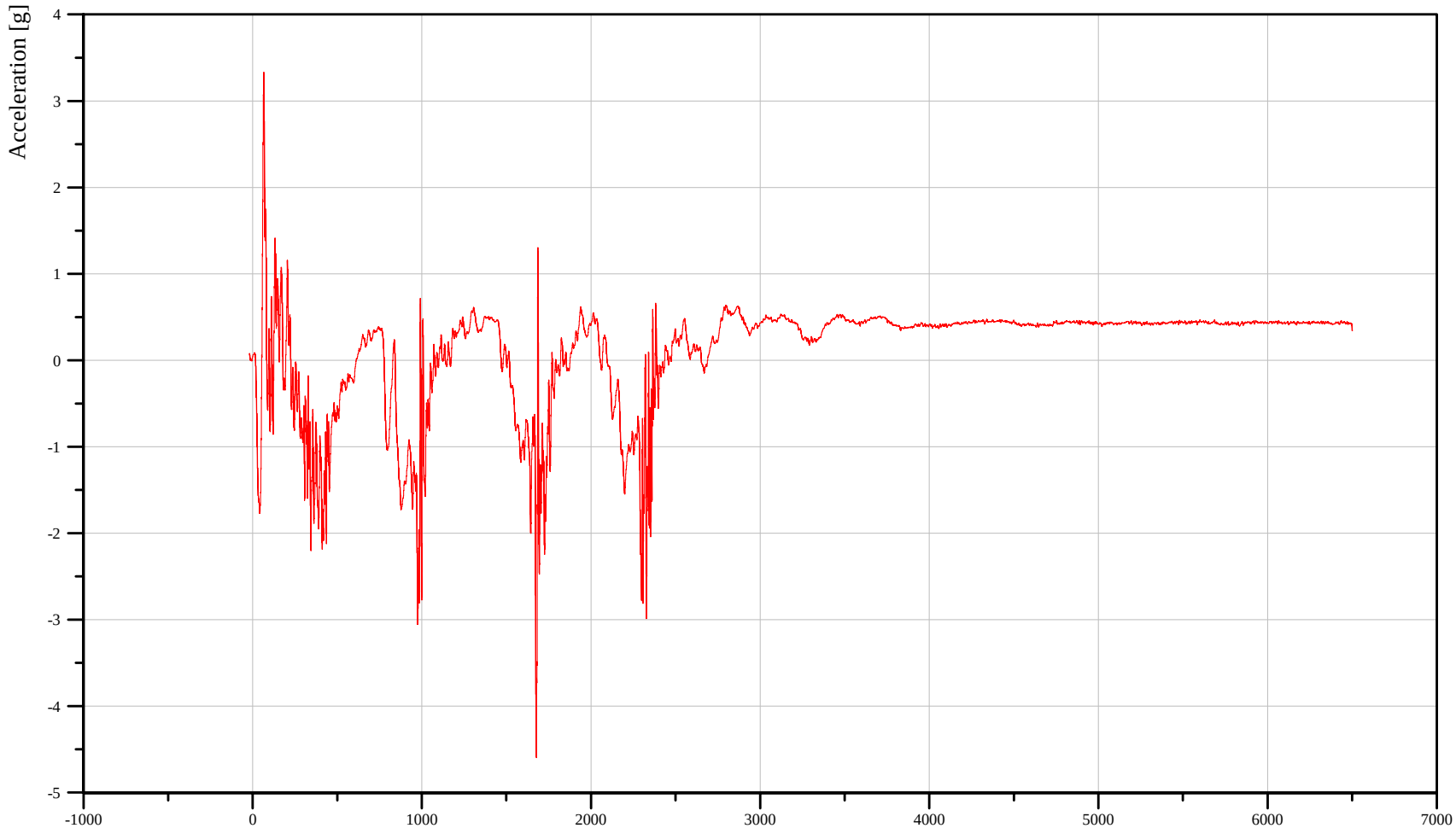
RR Seat Position (on floor) Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

16SEAT000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-4.60 g at 1,675.76 ms

Max. Value
3.33 g at 64.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

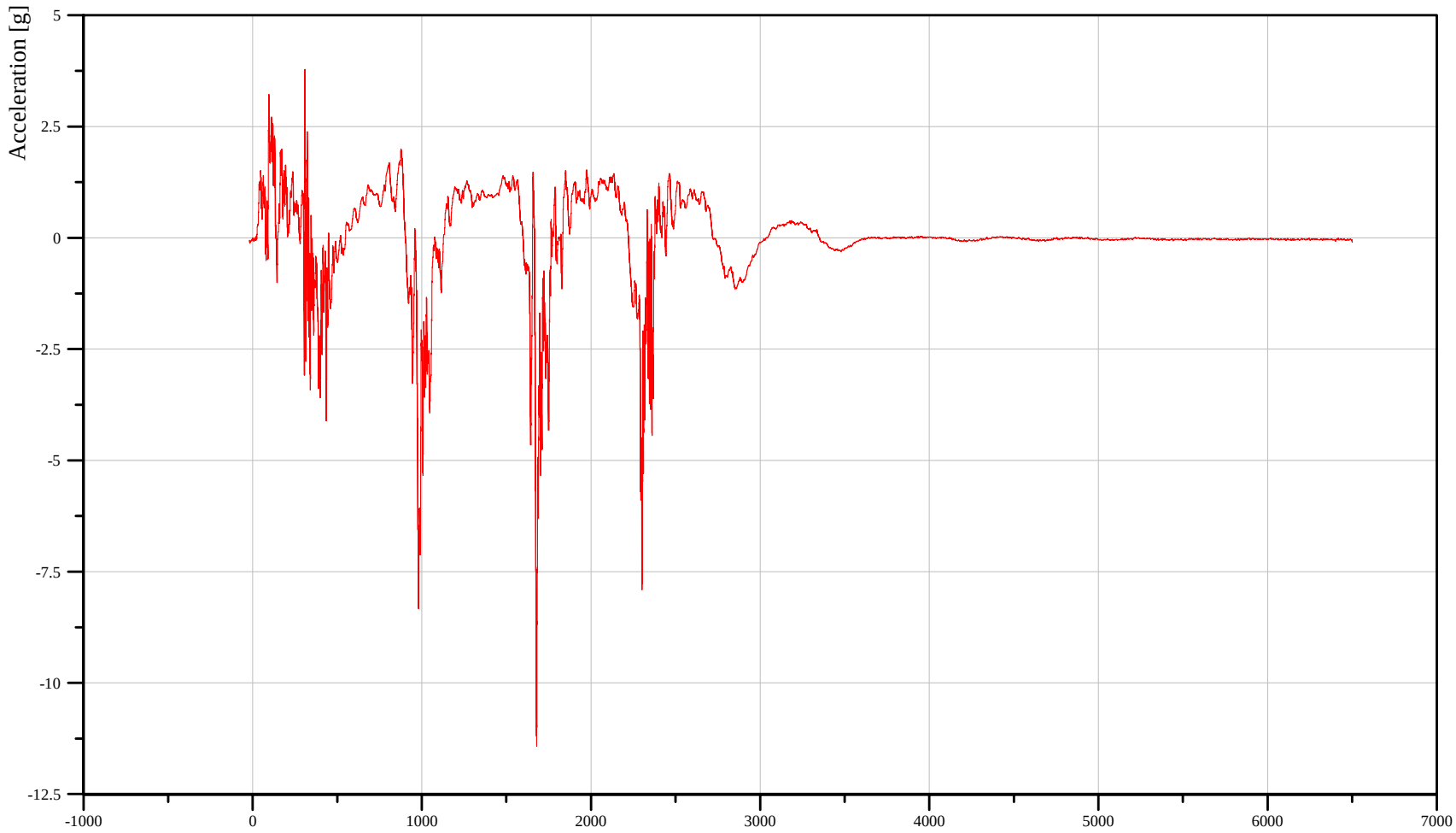
RR Seat Position (on floor) Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

16SEAT000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-11.42 g at 1,678.08 ms

Max. Value
3.79 g at 308.80 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

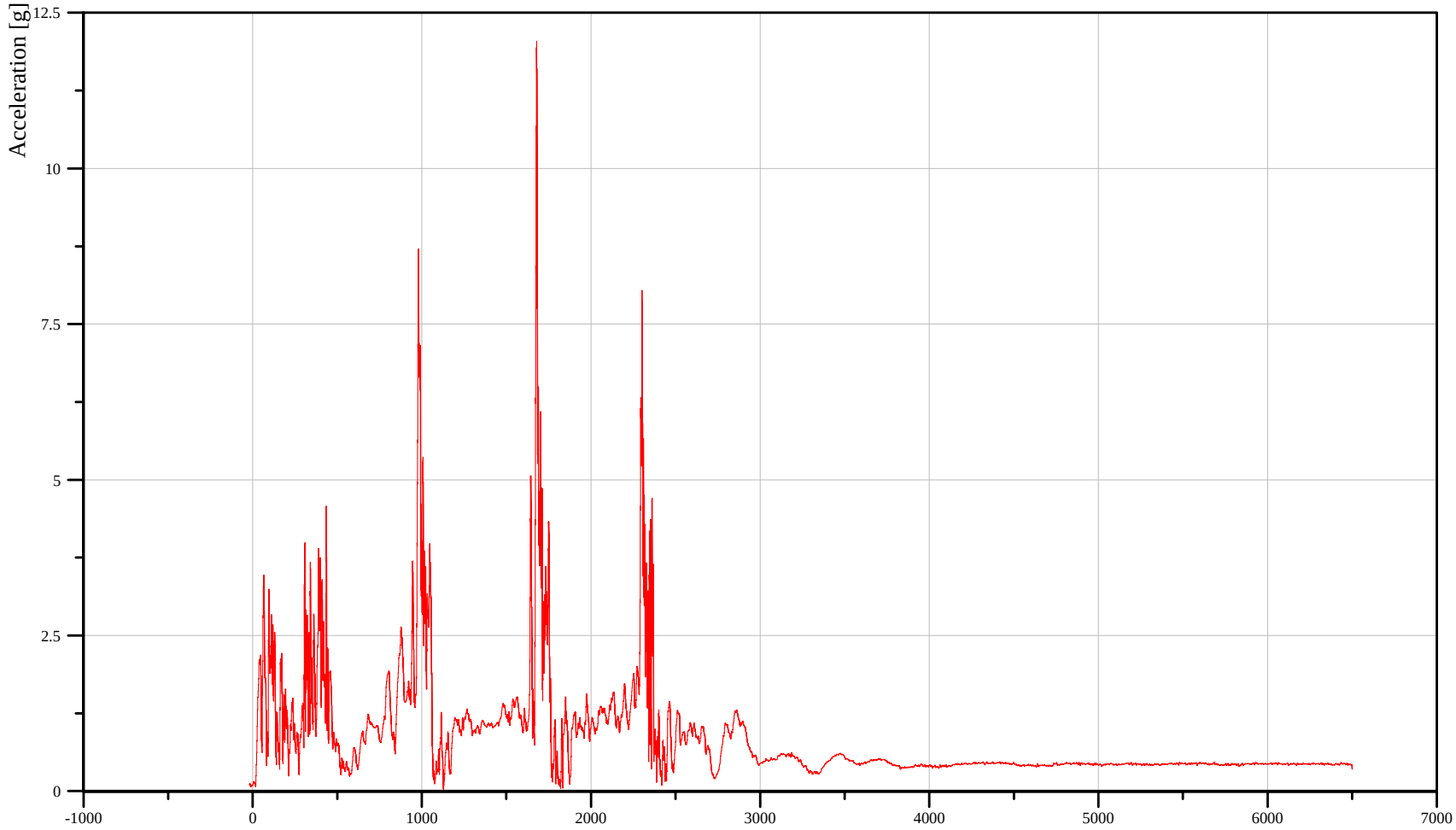
RR Seat Position (on floor) Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

16SEAT000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.03 g at 1,127.44 ms

Max. Value
12.04 g at 1,678.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

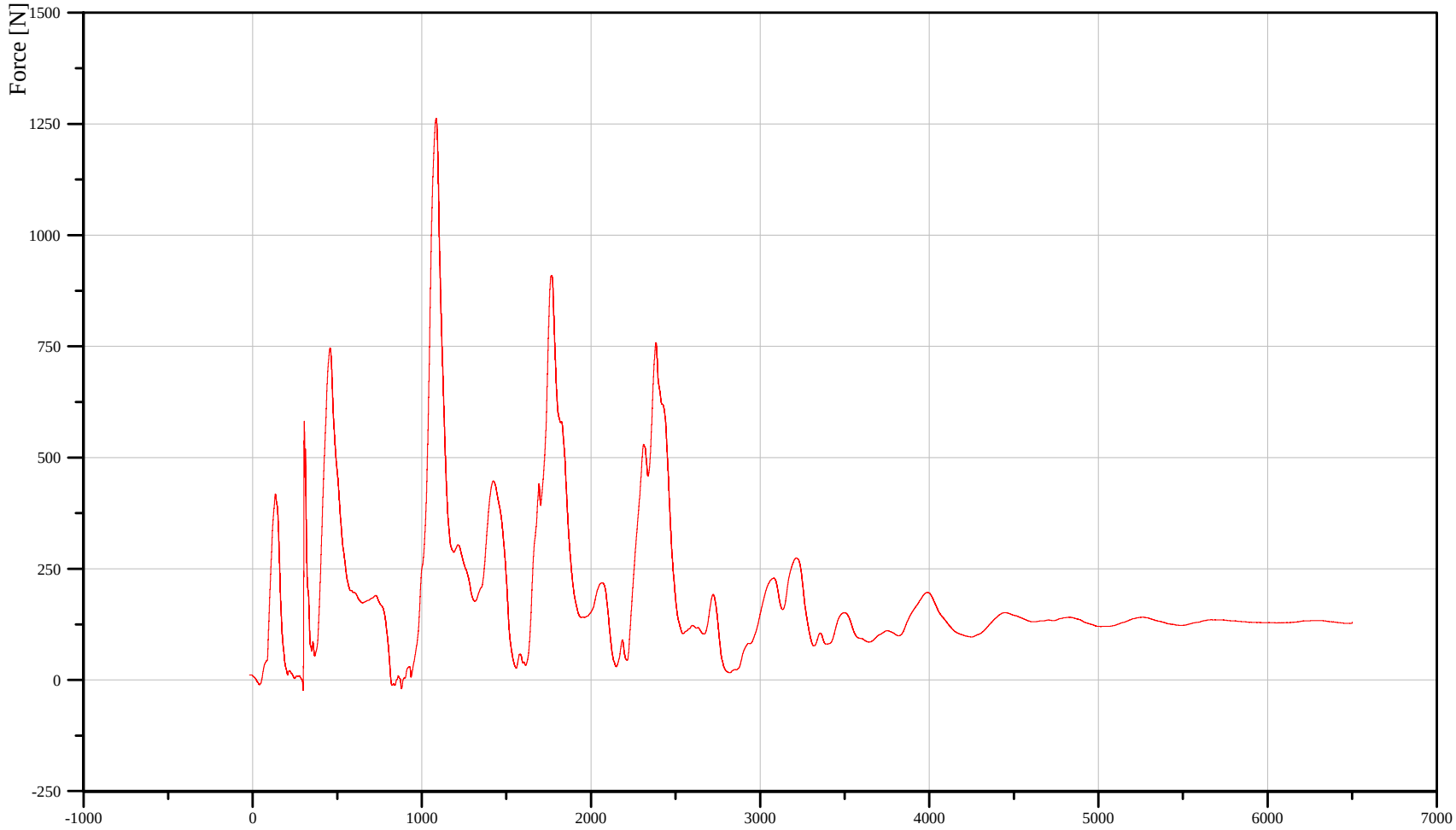
Driver Lap Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-23.06 N at 297.68 ms

Max. Value
1,262.57 N at 1,083.76 ms

FMVSS 208 Rollover 2007 Ford Expedition

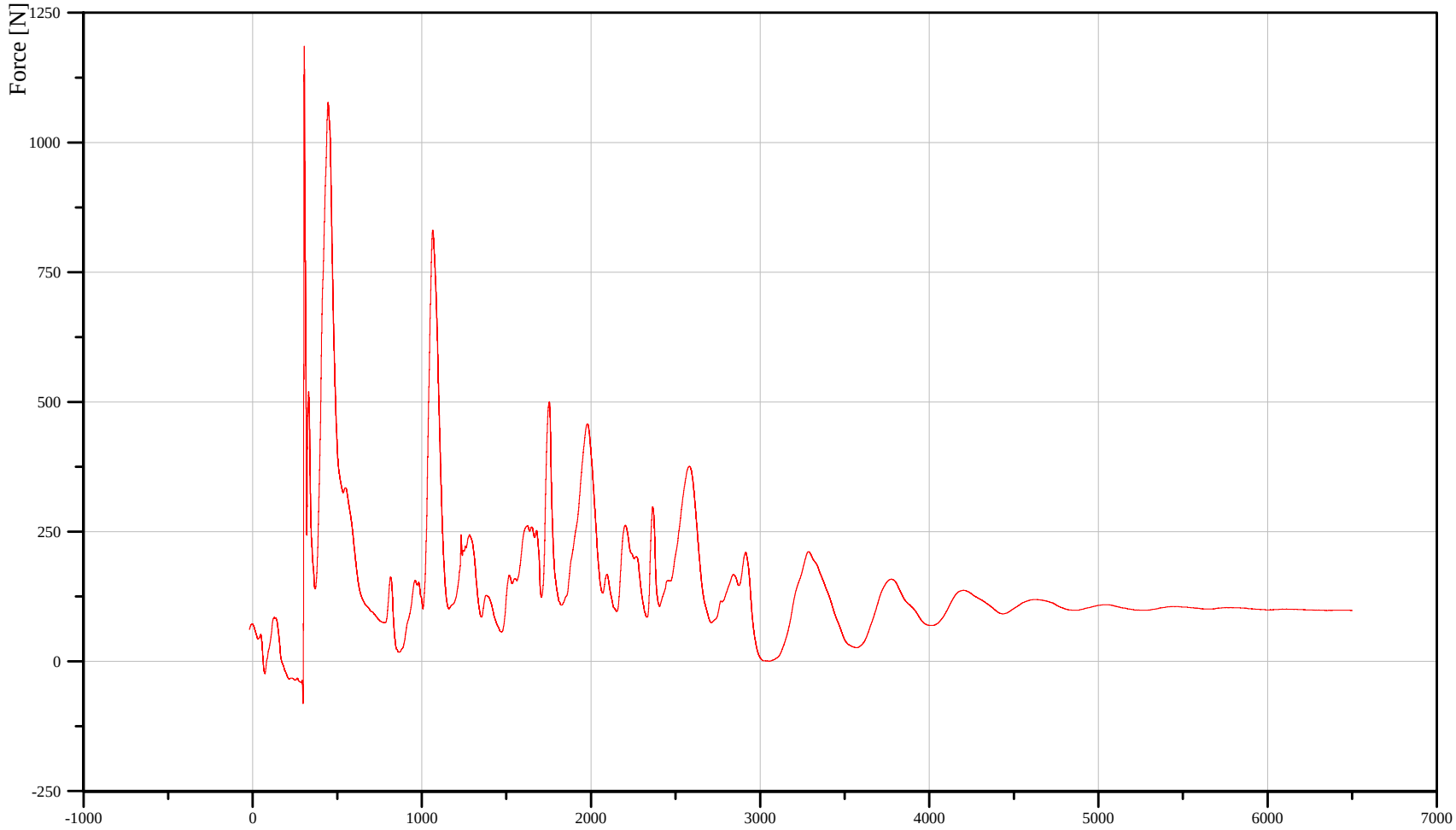
Driver Shoulder Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEBE0000B3FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-81.58 N at 297.44 ms

Max. Value
1,185.75 N at 304.16 ms

FMVSS 208 Rollover 2007 Ford Expedition

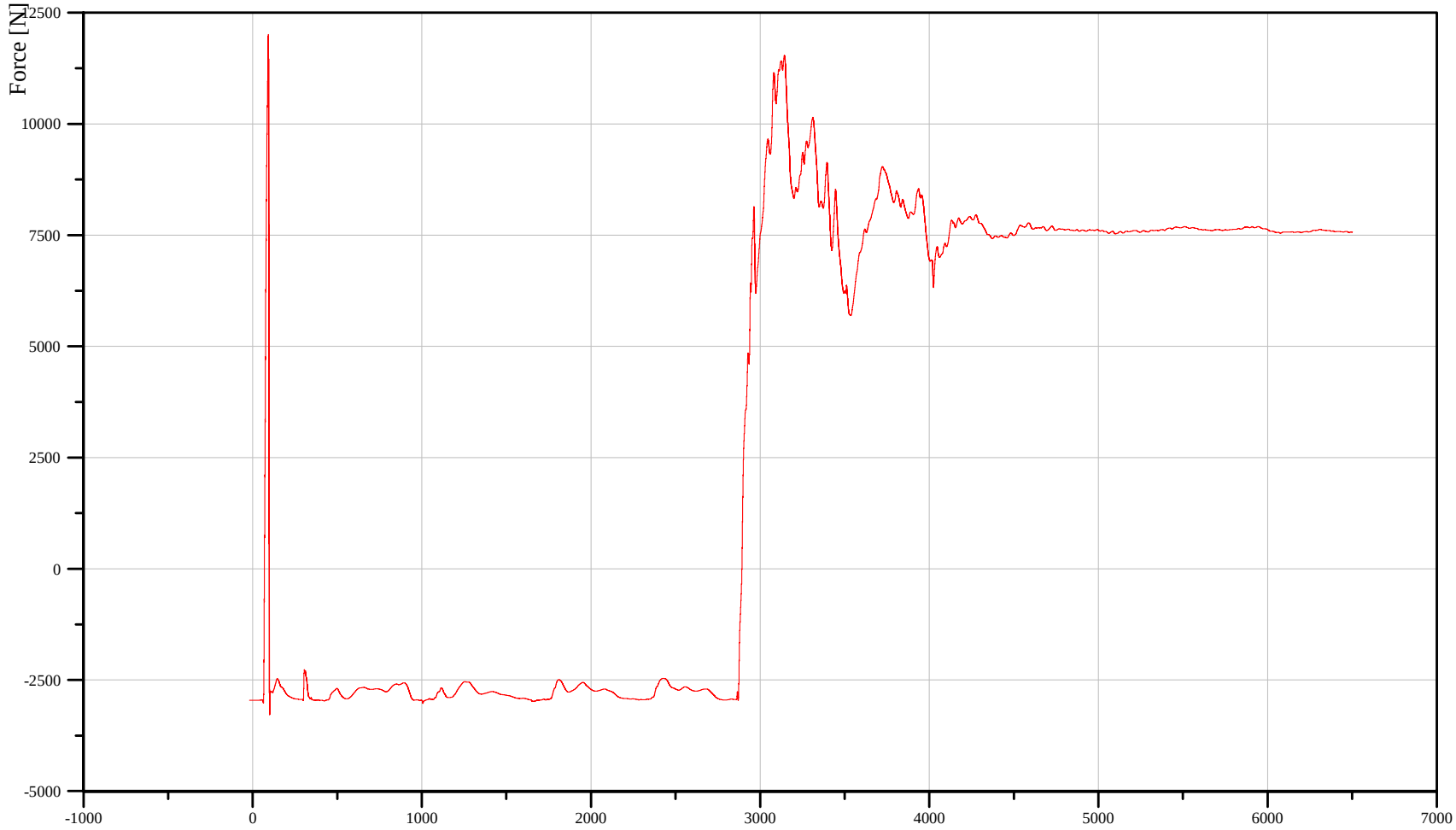
Right Front Passenger Lap Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-3,284.72 N at 100.00 ms

Max. Value
12,008.28 N at 91.84 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

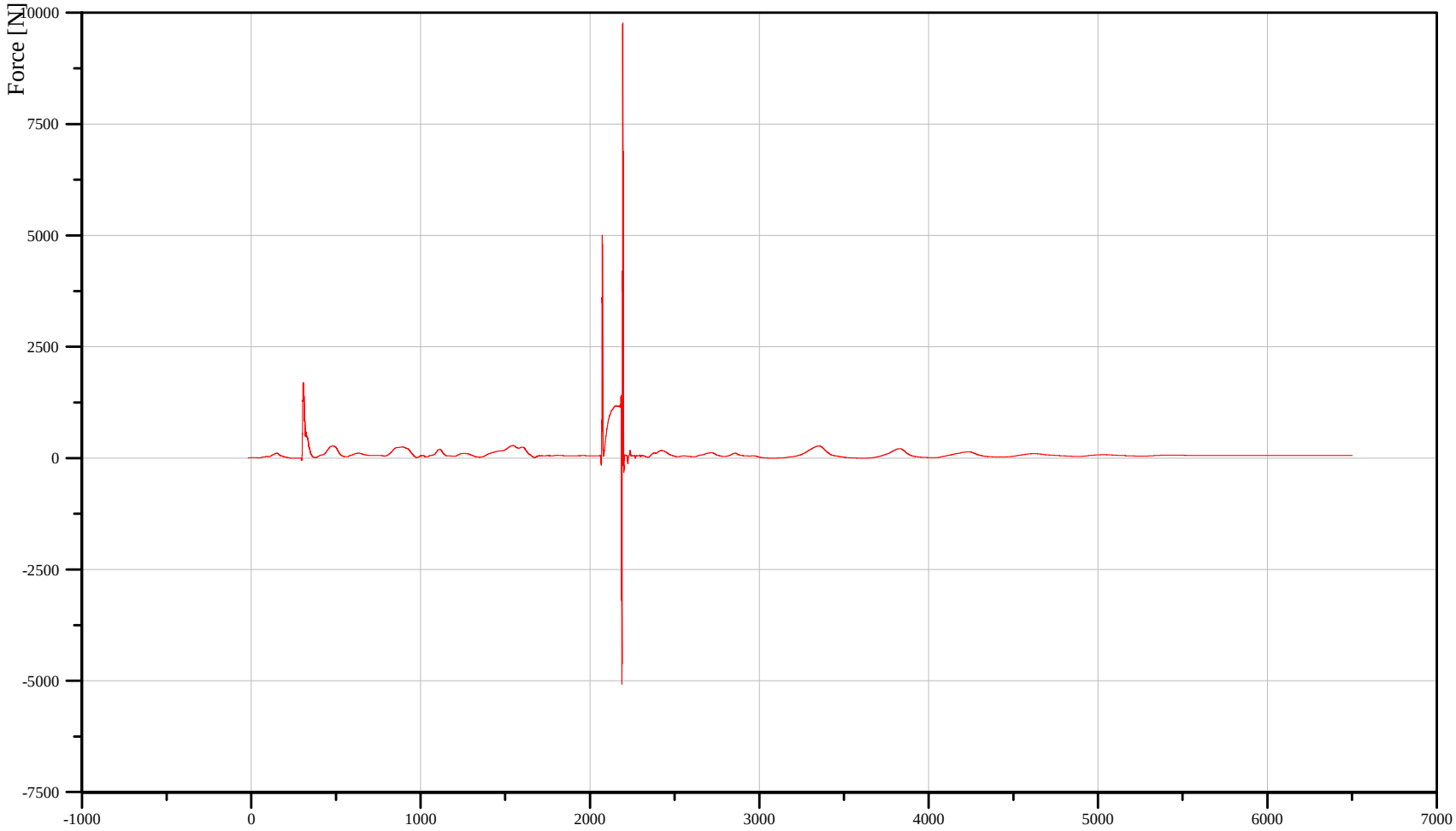
Right Front Passenger Shoulder Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEBE0000B3FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-5,076.40 N at 2,188.72 ms

Max. Value
9,773.59 N at 2,192.96 ms

FMVSS 208 Rollover 2007 Ford Expedition

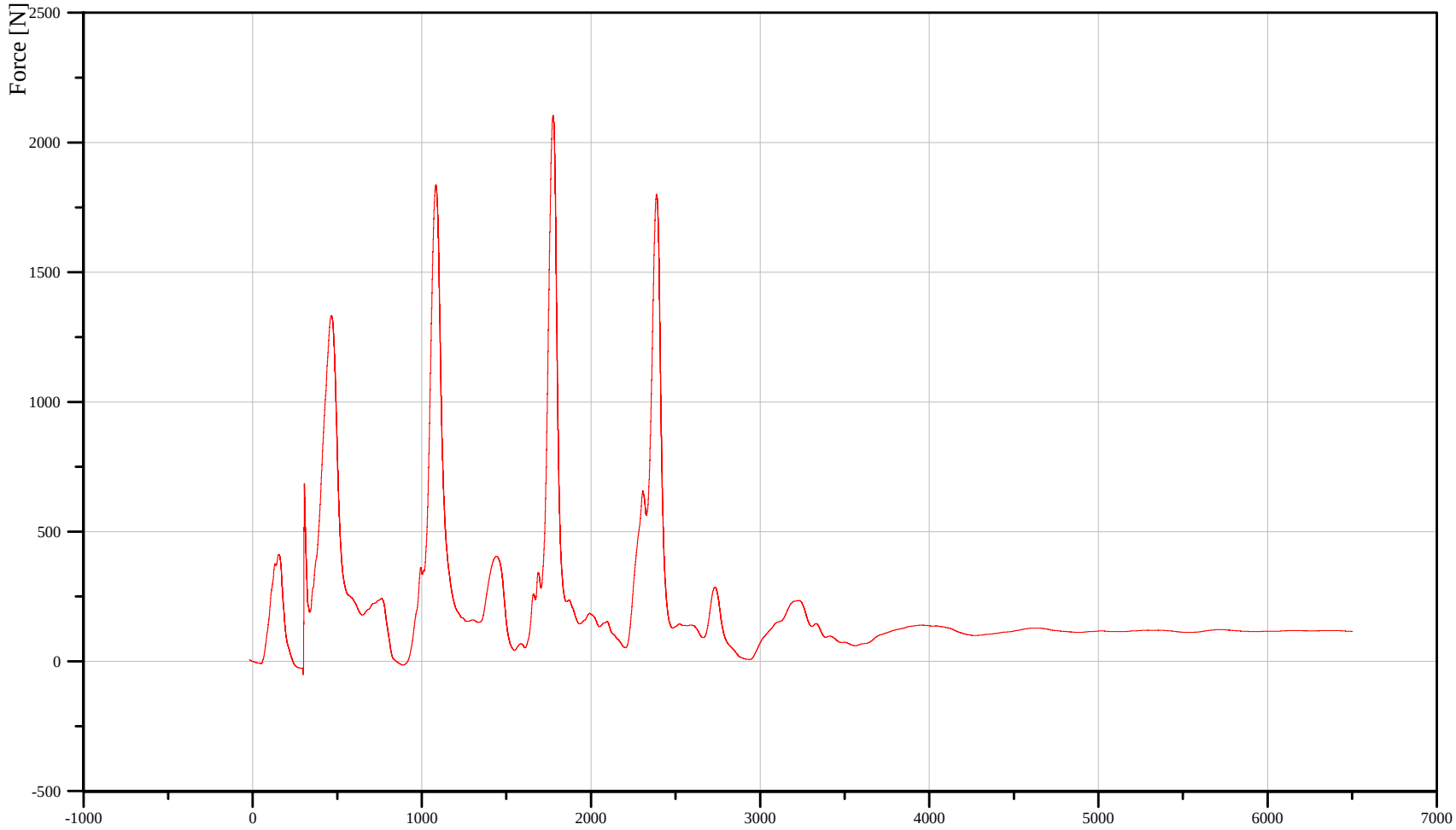
Left Rear Passenger Lap Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEBE0000B5FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-50.98 N at 298.24 ms

Max. Value
2,104.86 N at 1,775.20 ms

FMVSS 208 Rollover 2007 Ford Expedition

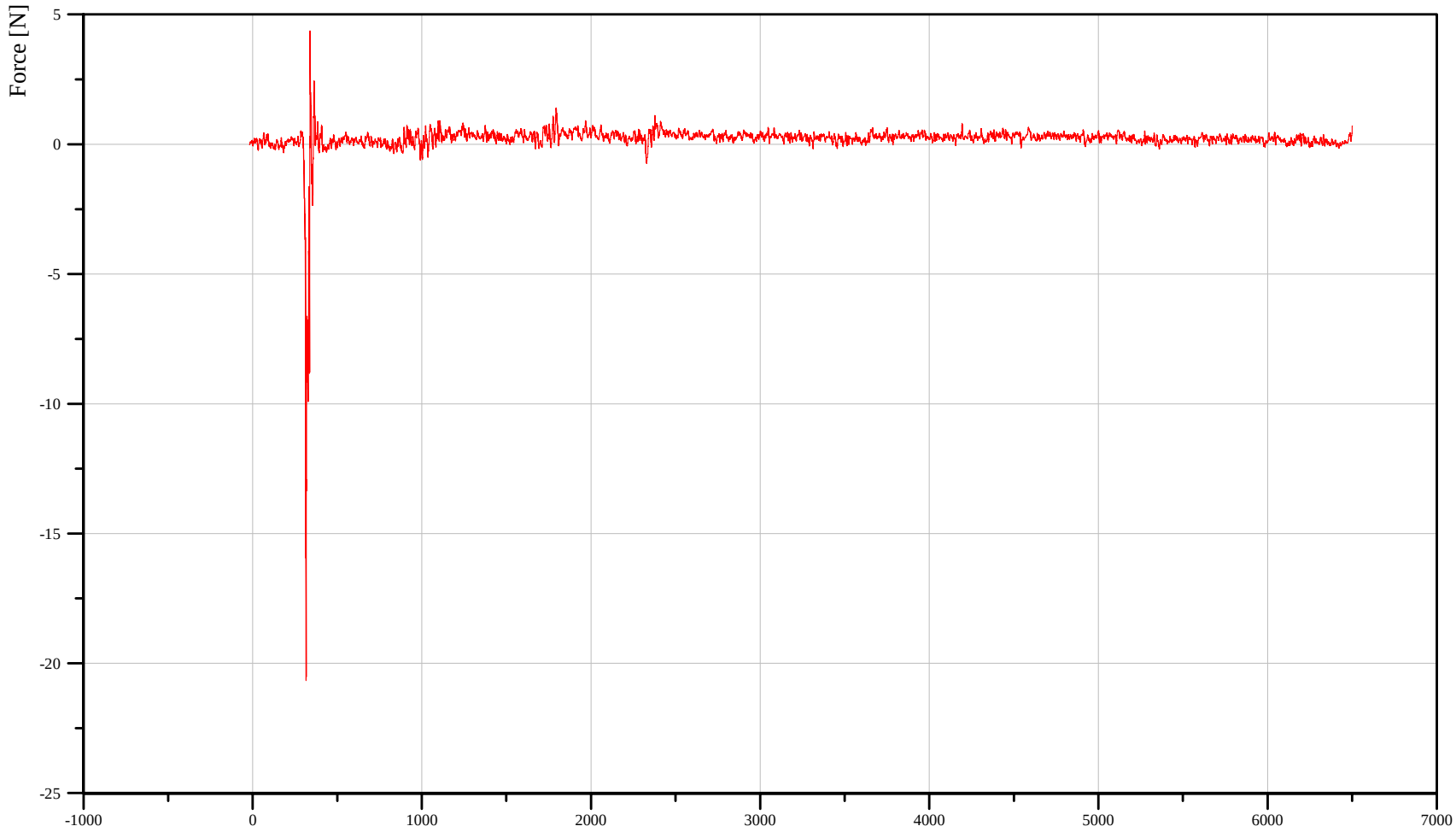
Left Rear Passenger Shoulder Belt Force

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEBE0000B3FO0D

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-20.67 N at 315.60 ms

Max. Value
4.37 N at 339.04 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

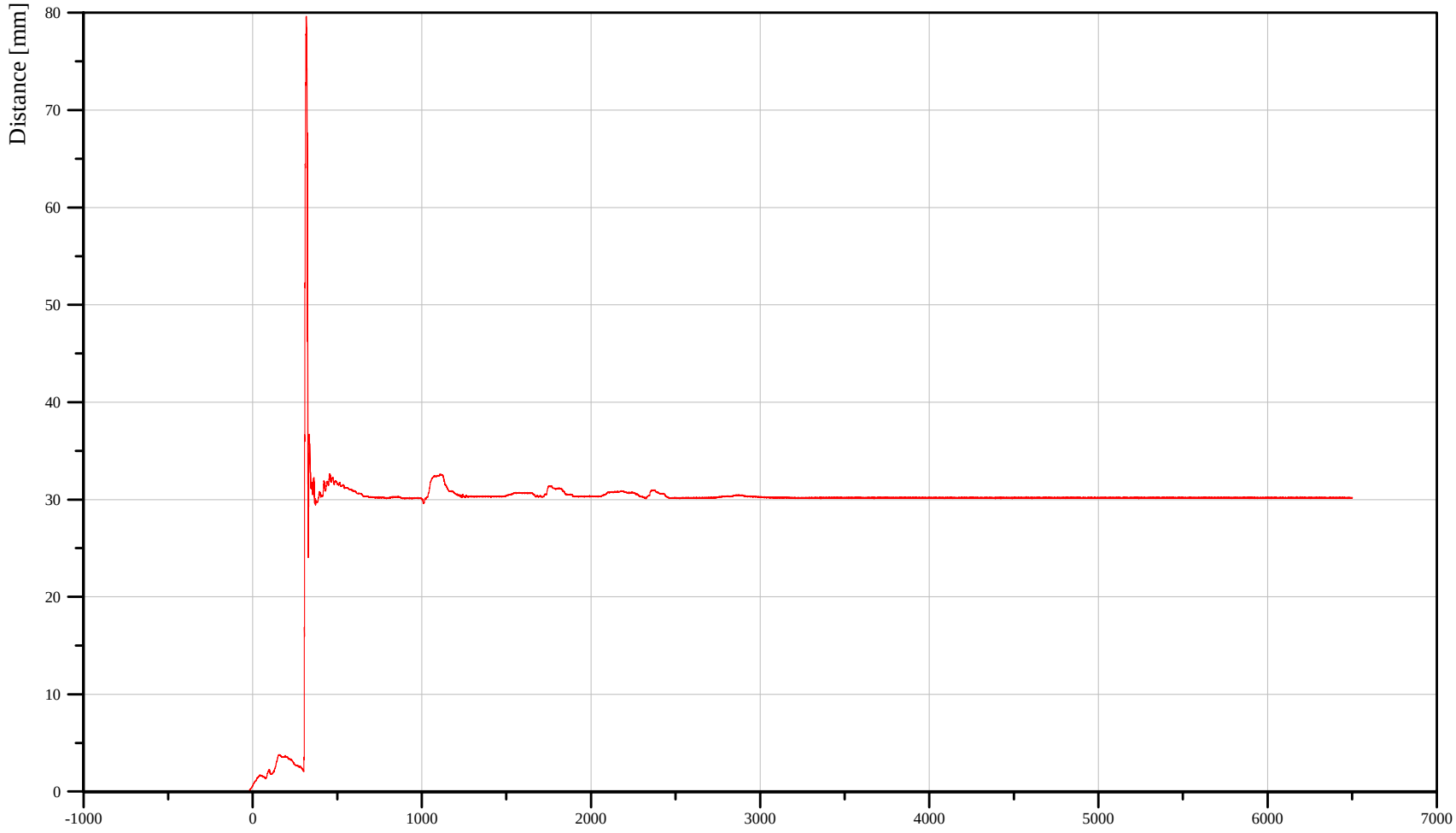
Driver Seat Belt Spool Potentiometer

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11SEBE0000B5DS0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.15 mm at -20.00 ms

Max. Value
79.63 mm at 316.00 ms

FMVSS 208 Rollover 2007 Ford Expedition

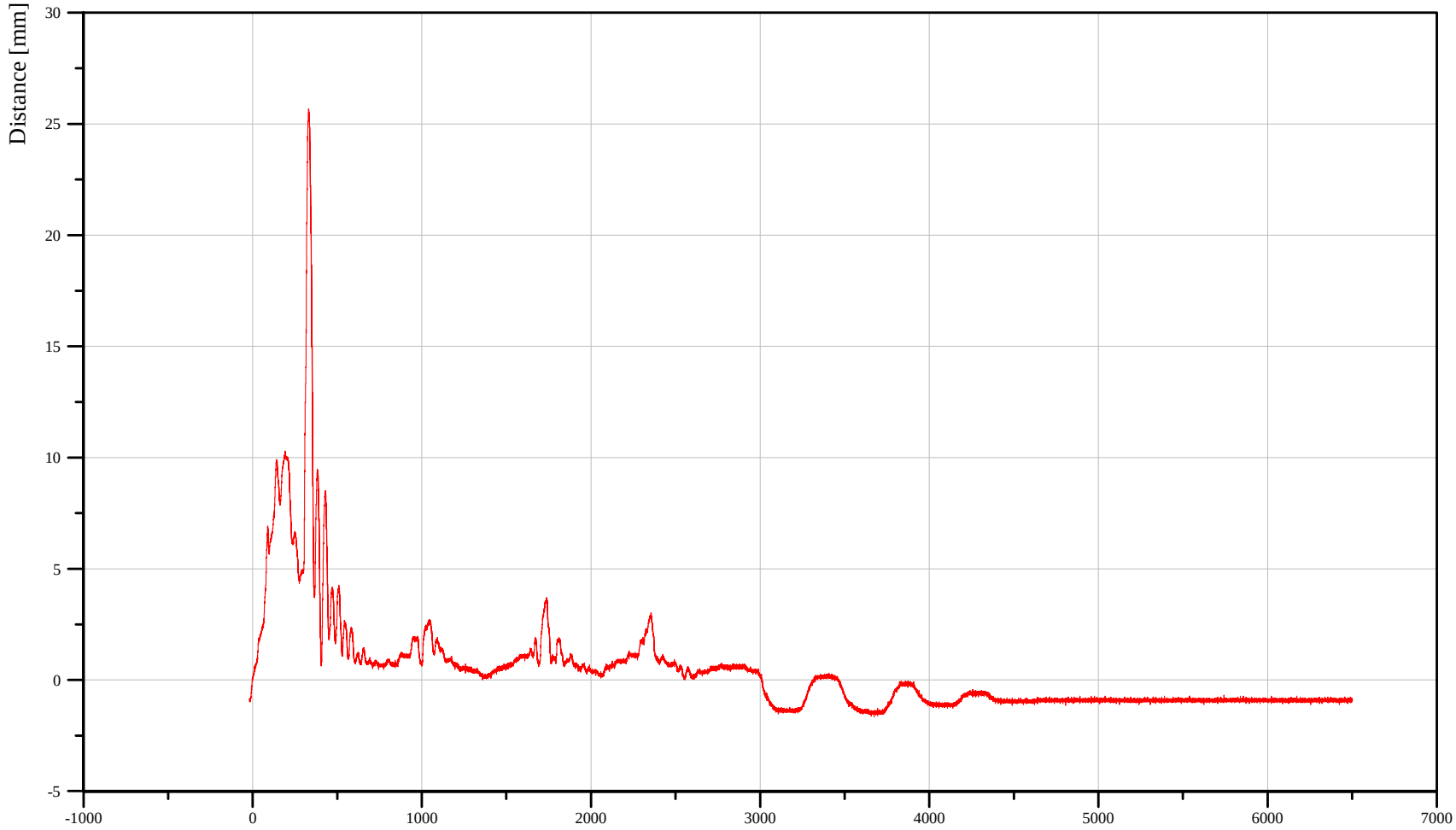
Right Front Passenger Belt Spool Potentiometer

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13SEBE0000B5DS0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-1.66 mm at 3,673.28 ms

Max. Value
25.68 mm at 329.52 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

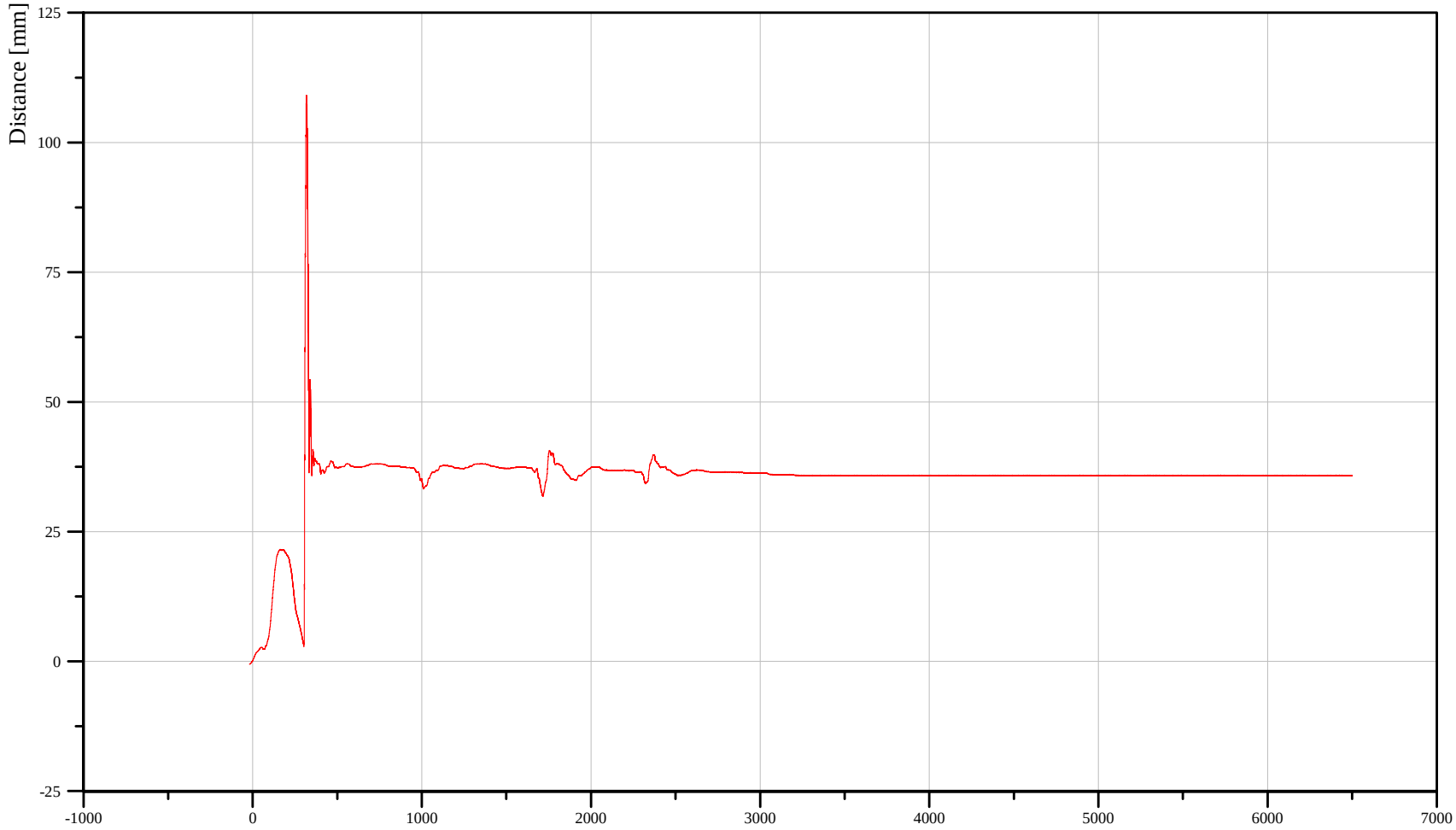
Left Rear Passenger Belt Spool Potentiometer

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14SEBE0000B5DS0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
-0.59 mm at -19.84 ms

Max. Value
109.11 mm at 317.52 ms

FMVSS 208 Rollover 2007 Ford Expedition

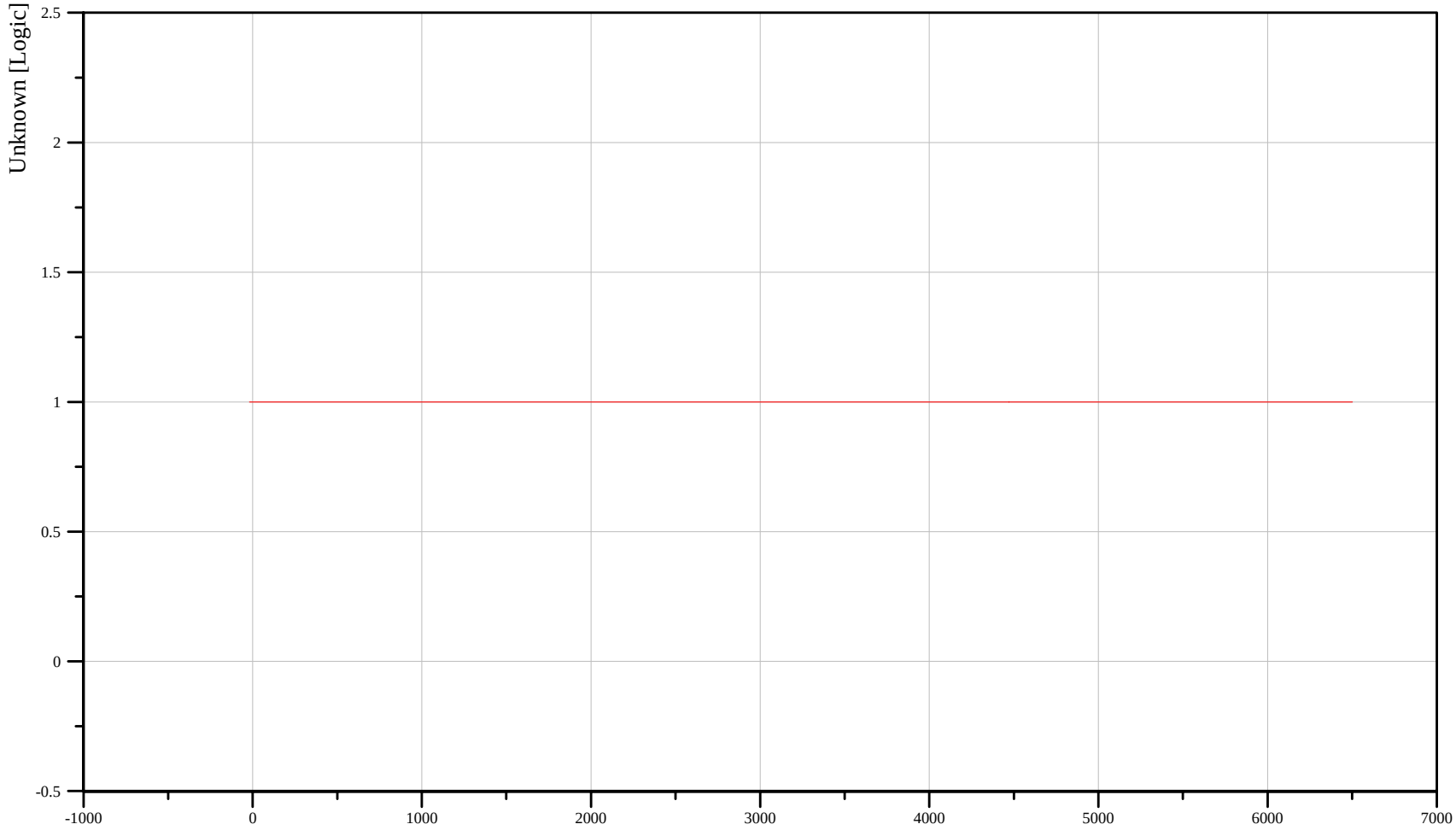
Driver Head Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CONT000023EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

FMVSS 208 Rollover 2007 Ford Expedition

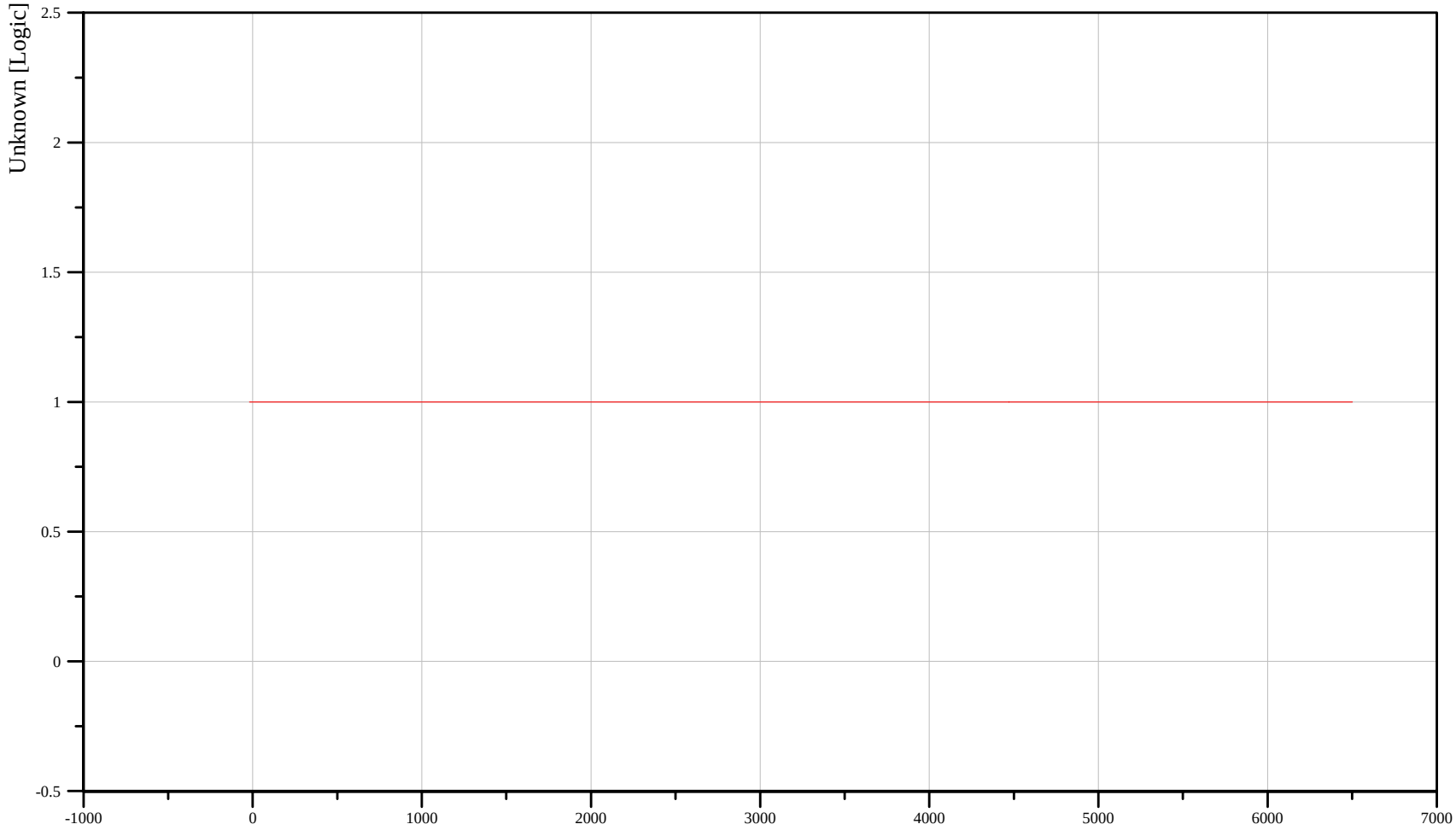
Driver Thorax Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CONT000024EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

FMVSS 208 Rollover 2007 Ford Expedition

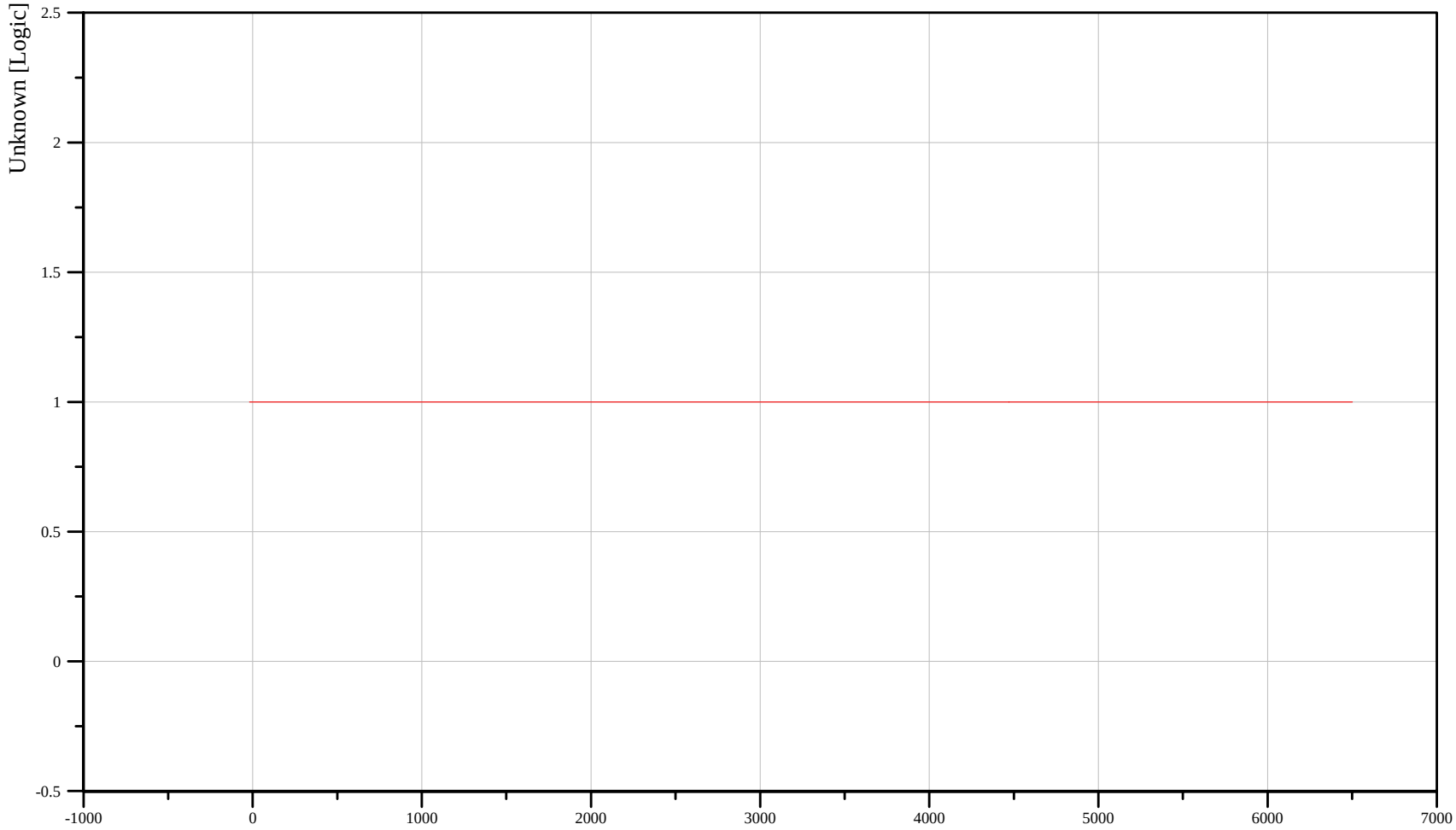
Driver Pelvis Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11CONT000025EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

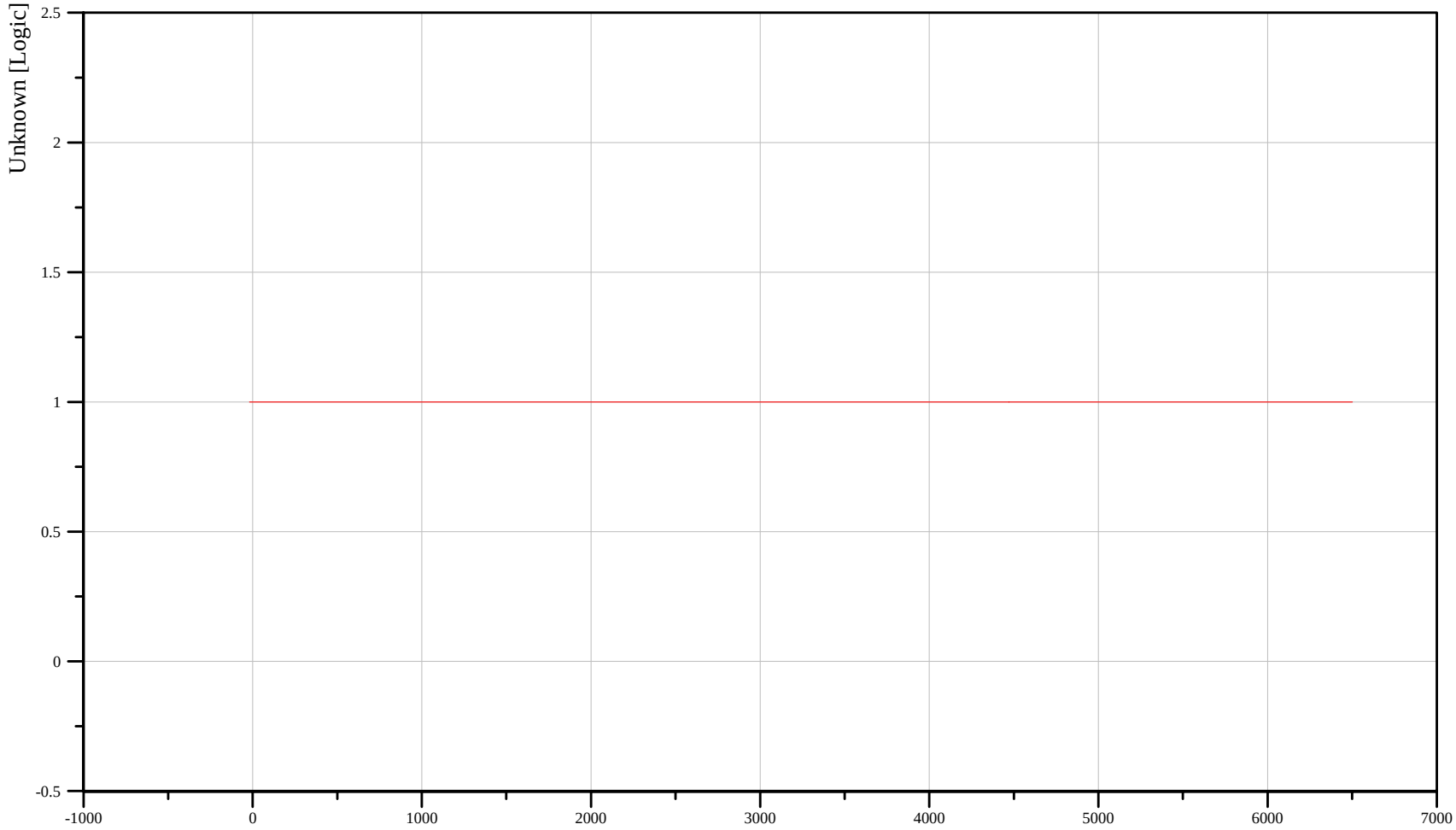
Right Front Passenger Head Contact Switch

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CONT000026EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

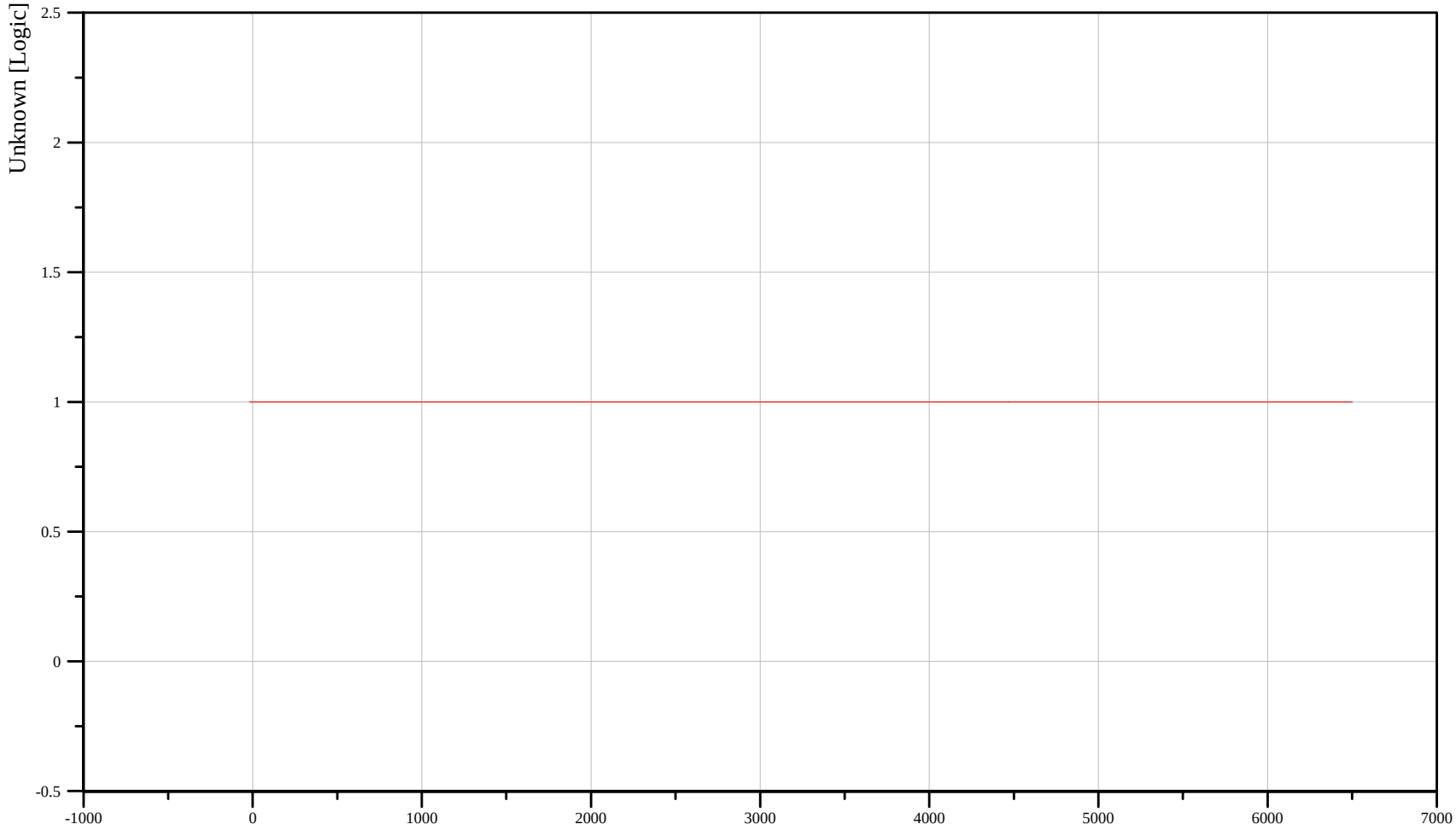
Right Front Passenger Thorax Contact Switch

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CONT000027EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

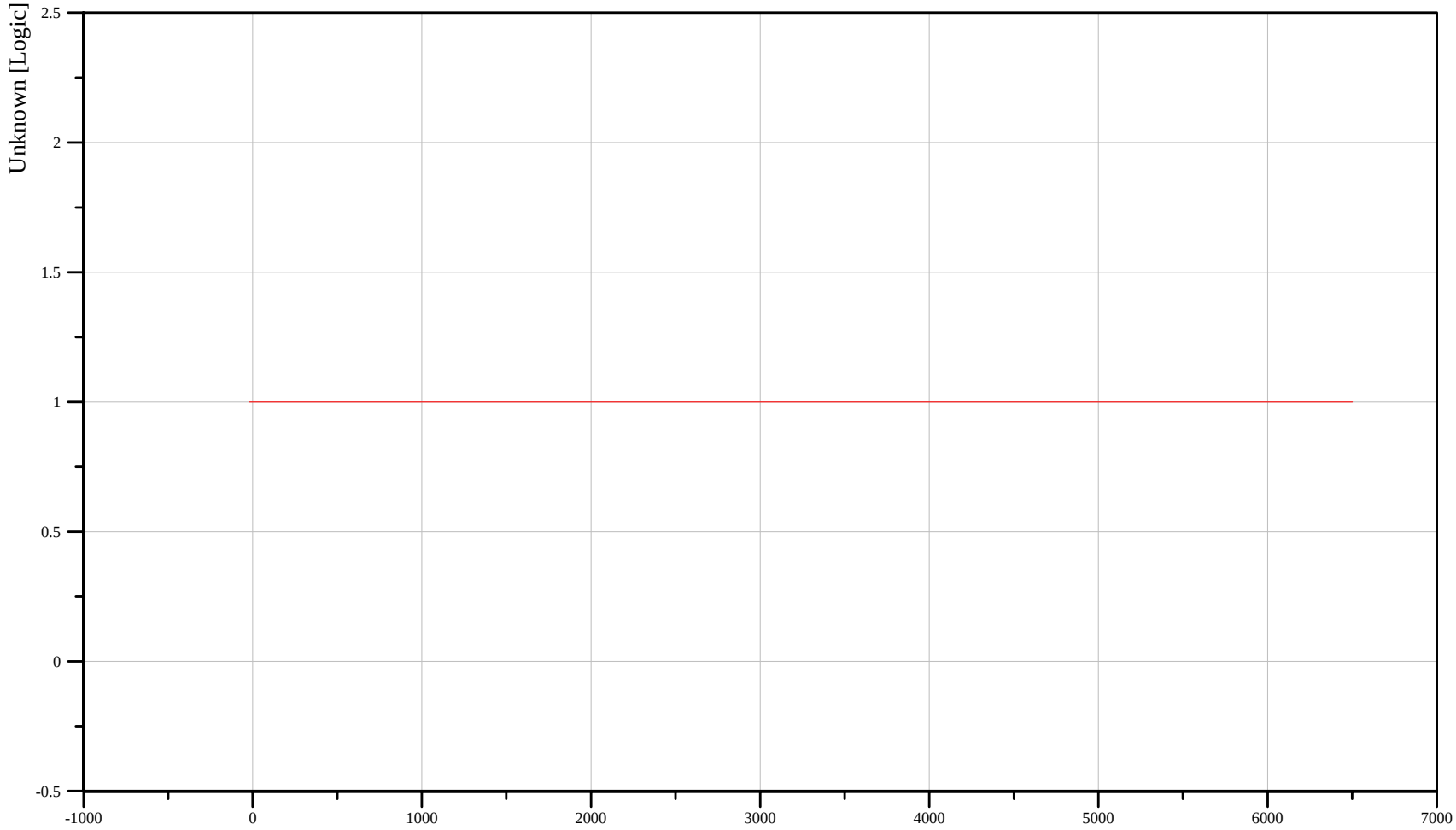
Right Front Passenger Pelvis Contact Switch

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13CONT000028EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

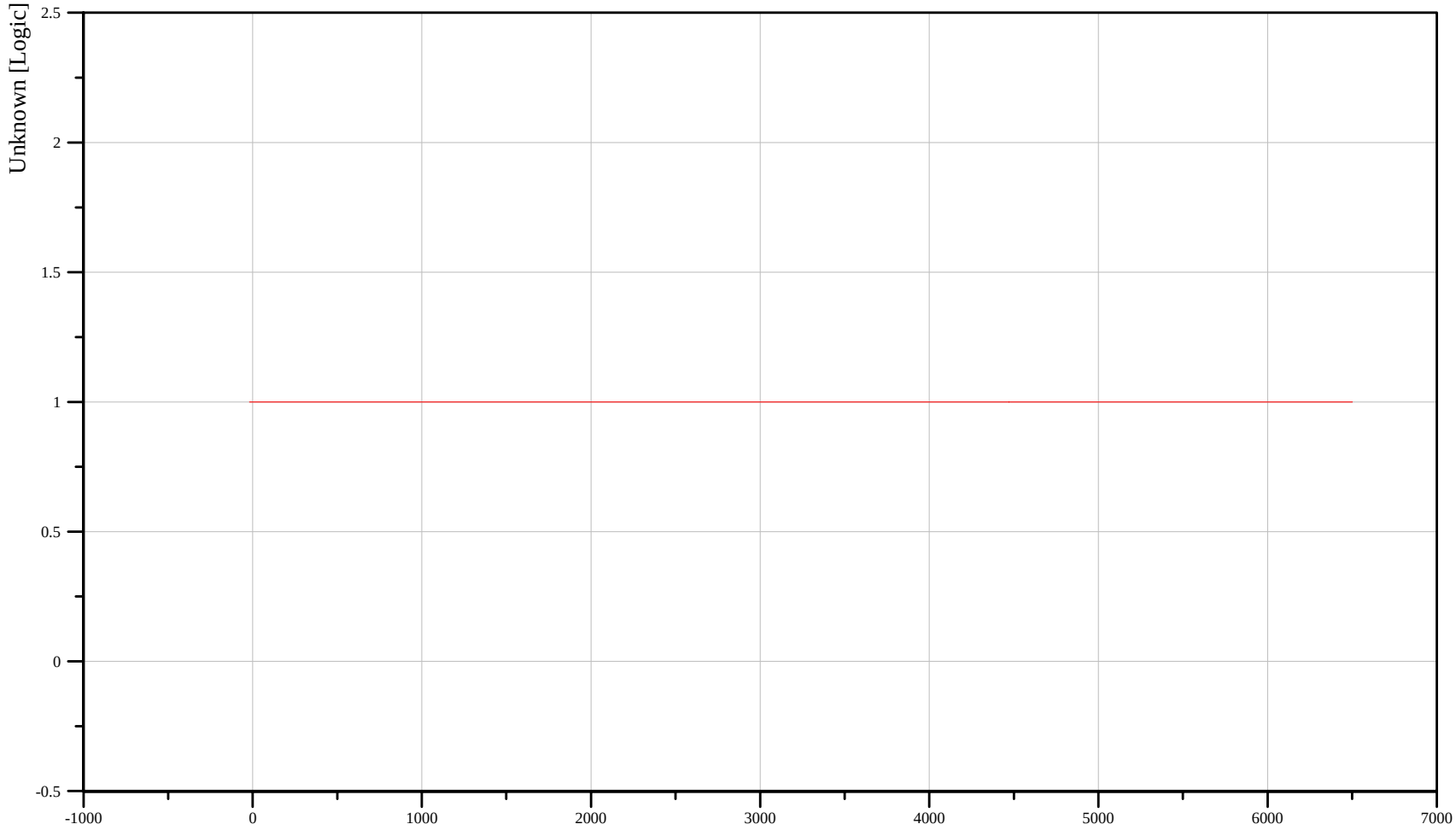
Left Rear Passenger Head Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CONT000029EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

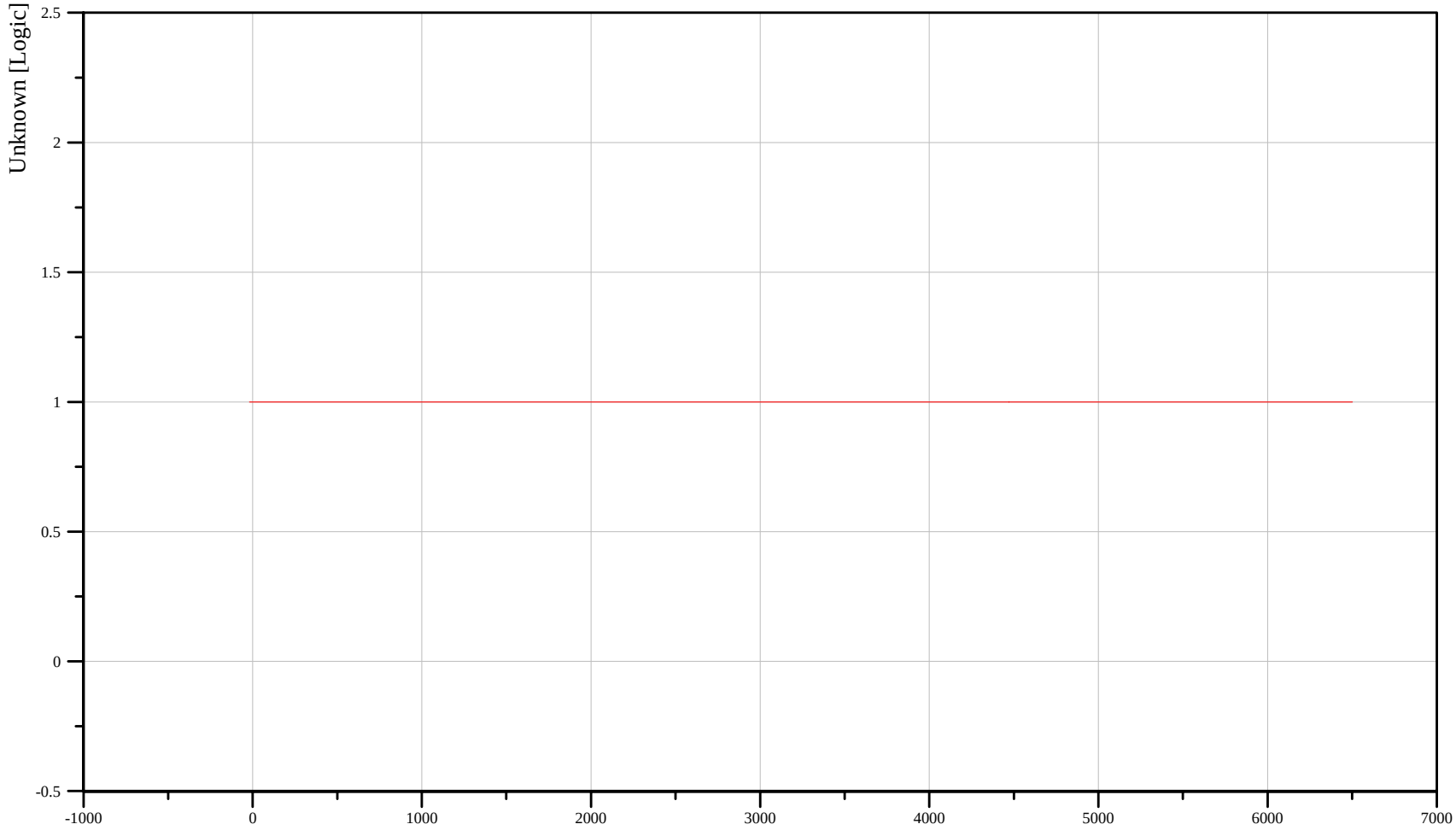
Left Rear Passenger Thorax Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CONT000030EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

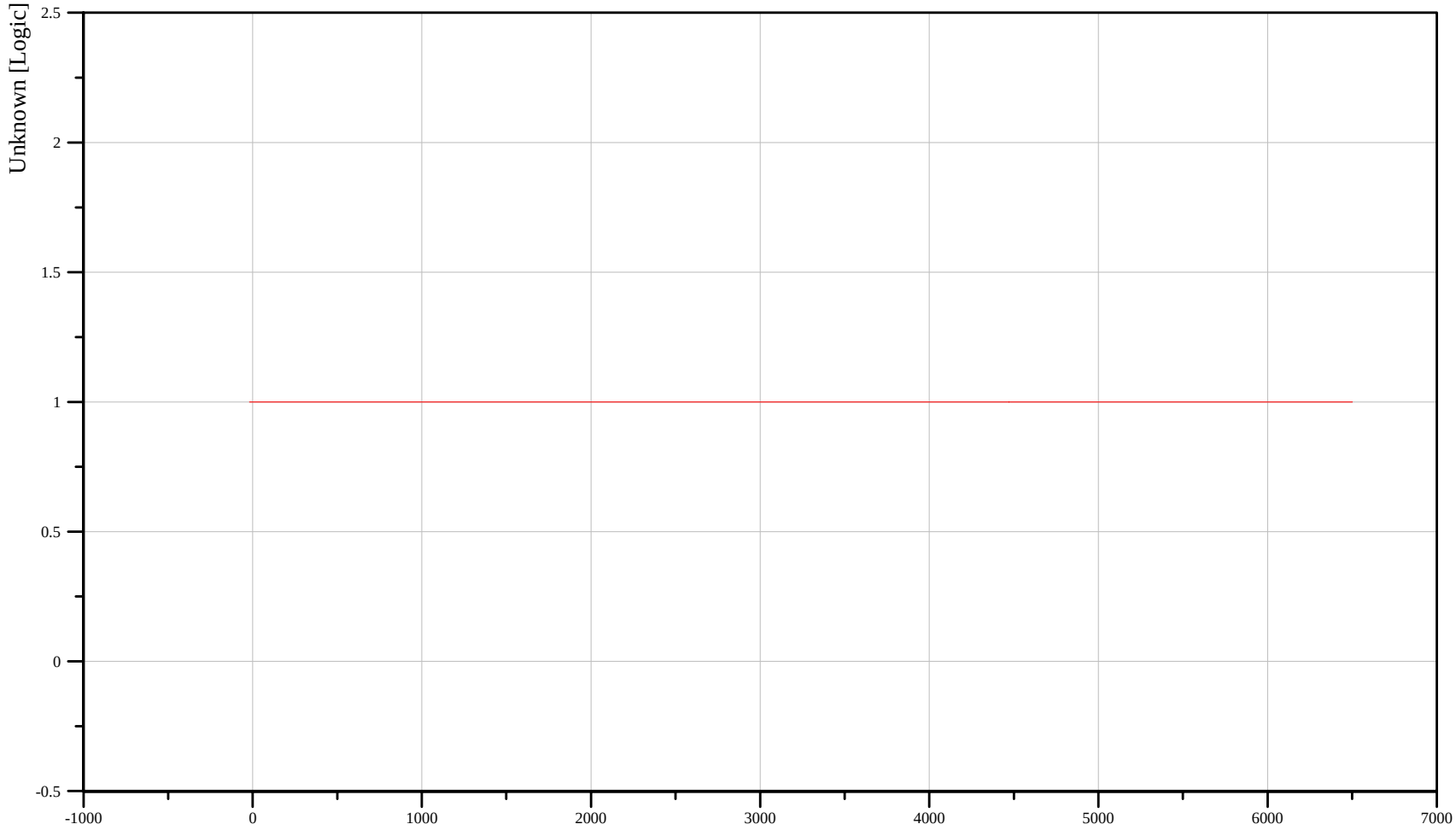
Left Rear Passenger Pelvis Contact

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14CONT000031EV00

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: Unfiltered

Min. Value
1.00 Logic at -20.00 ms

Max. Value
1.00 Logic at -20.00 ms

FMVSS 208 Rollover 2007 Ford Expedition

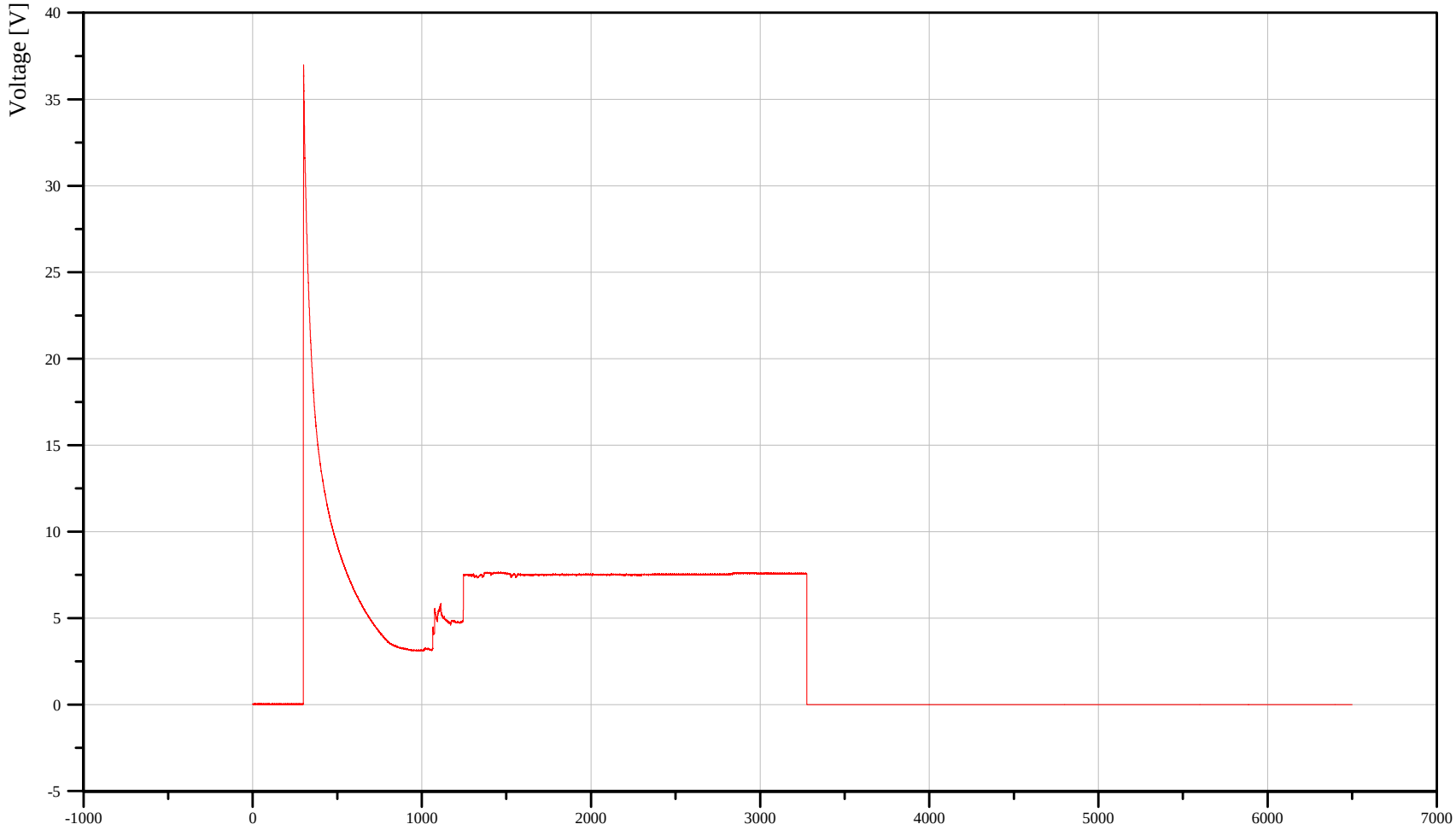
Driver Buckle Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11BCKLIN0000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 7.28 ms

Max. Value
36.99 V at 300.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

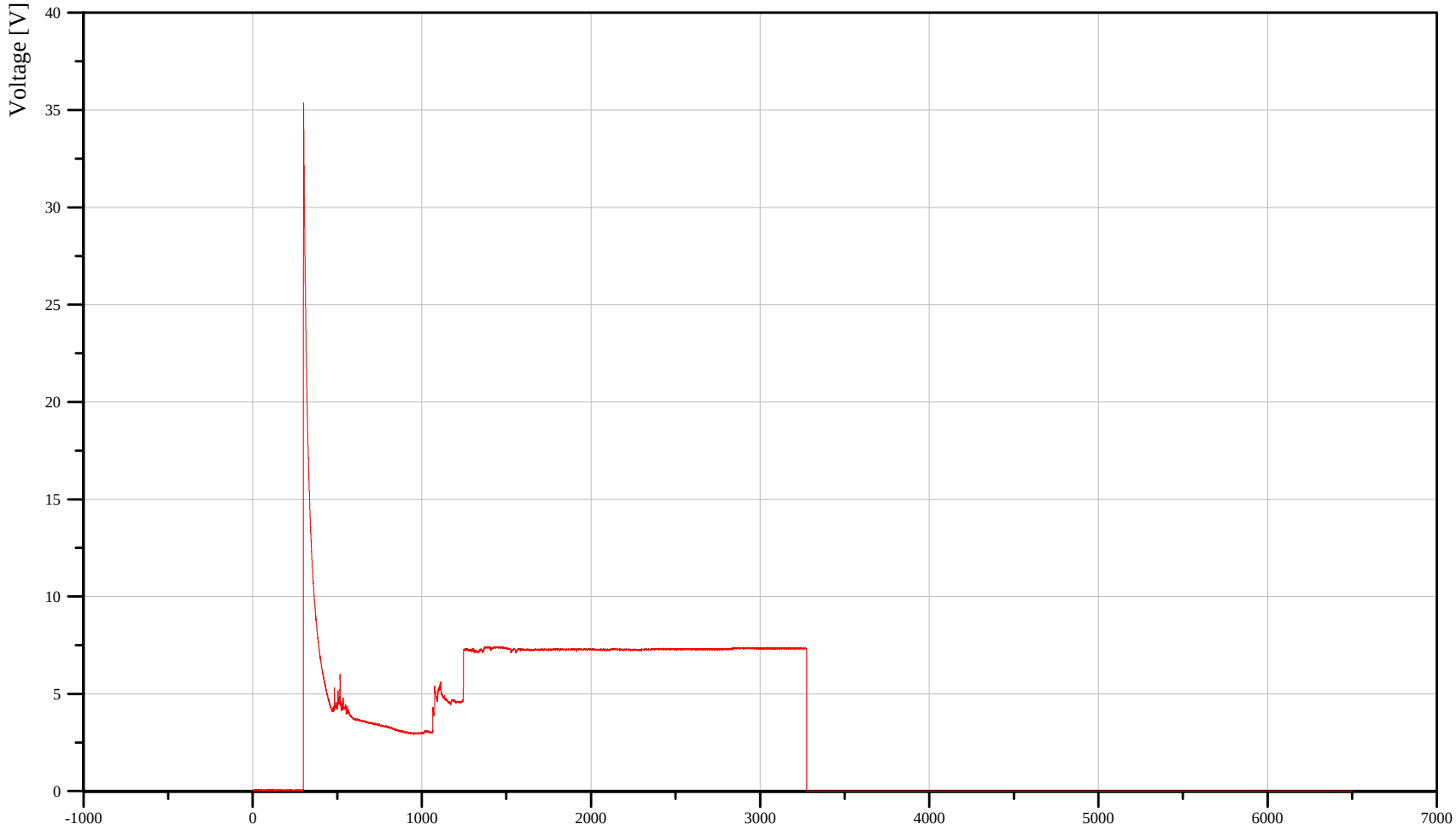
Left Rear Buckle Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

14BCKLIN0000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 83.84 ms

Max. Value
35.36 V at 300.96 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

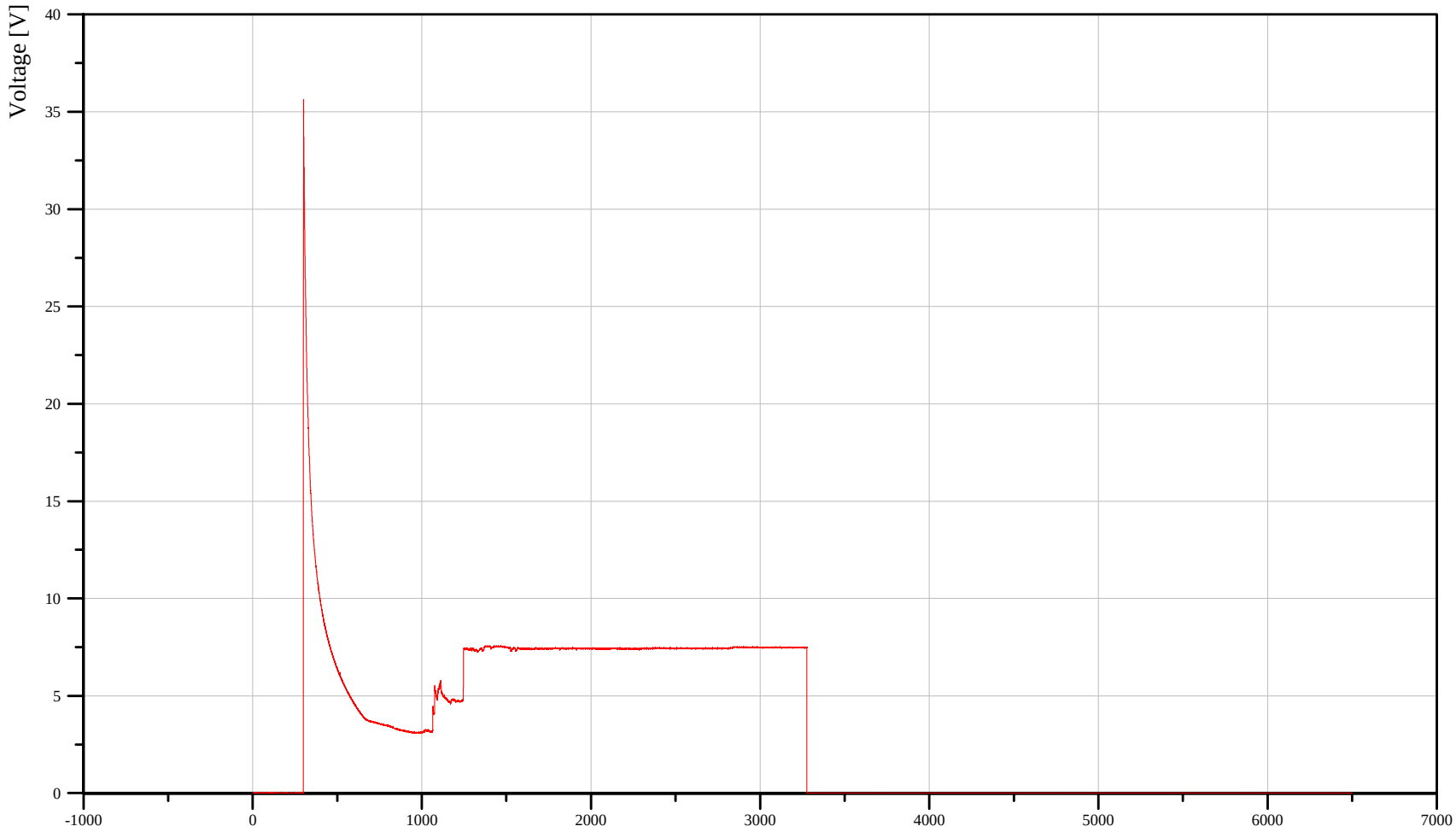
Right Front Passenger Inner Buckle Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13BCKLIN0000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 0.08 ms

Max. Value
35.62 V at 300.80 ms

FMVSS 208 Rollover 2007 Ford Expedition

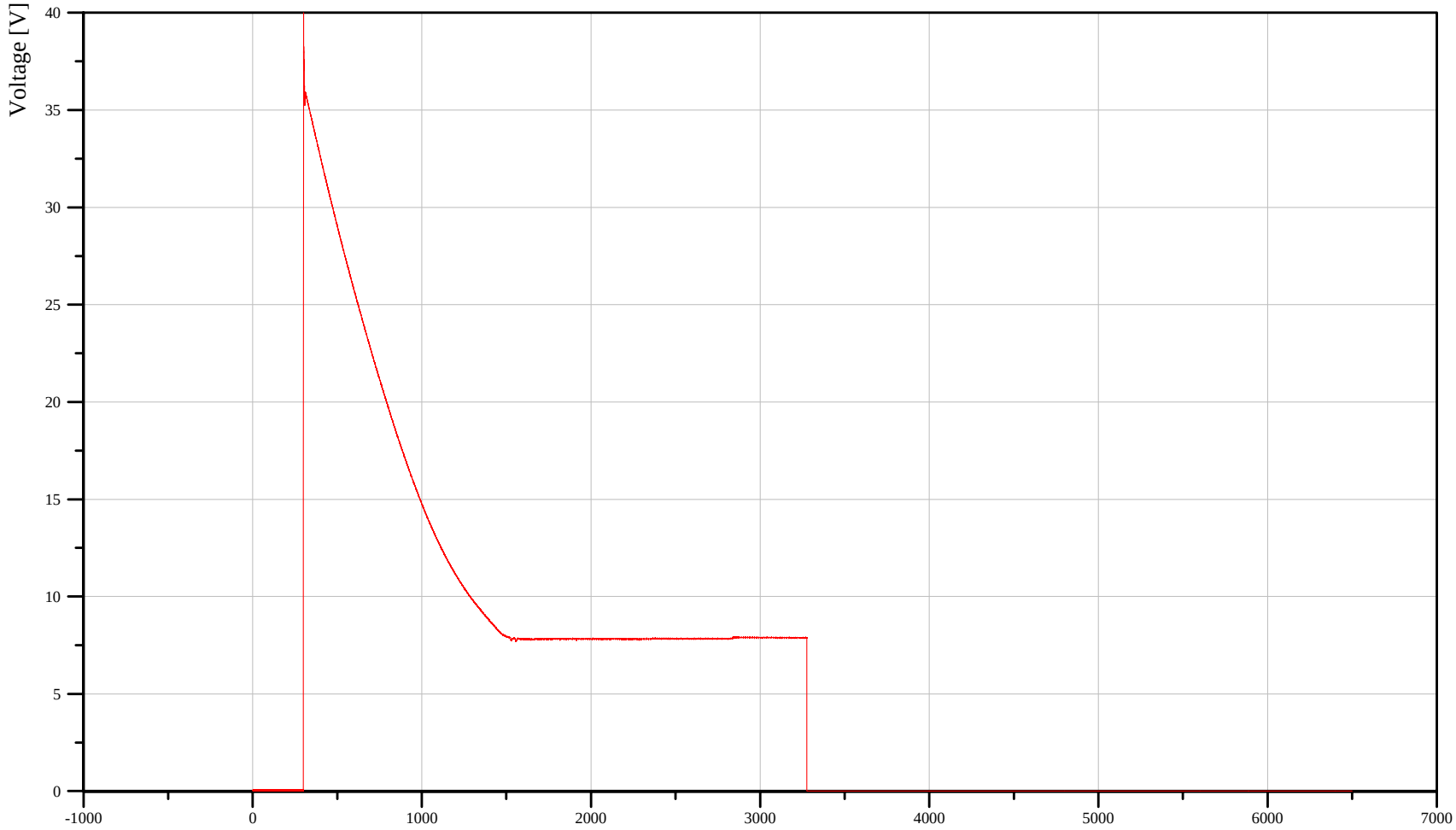
Right Front Passenger Retractor Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13RETR000000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 50.48 ms

Max. Value
39.99 V at 300.56 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

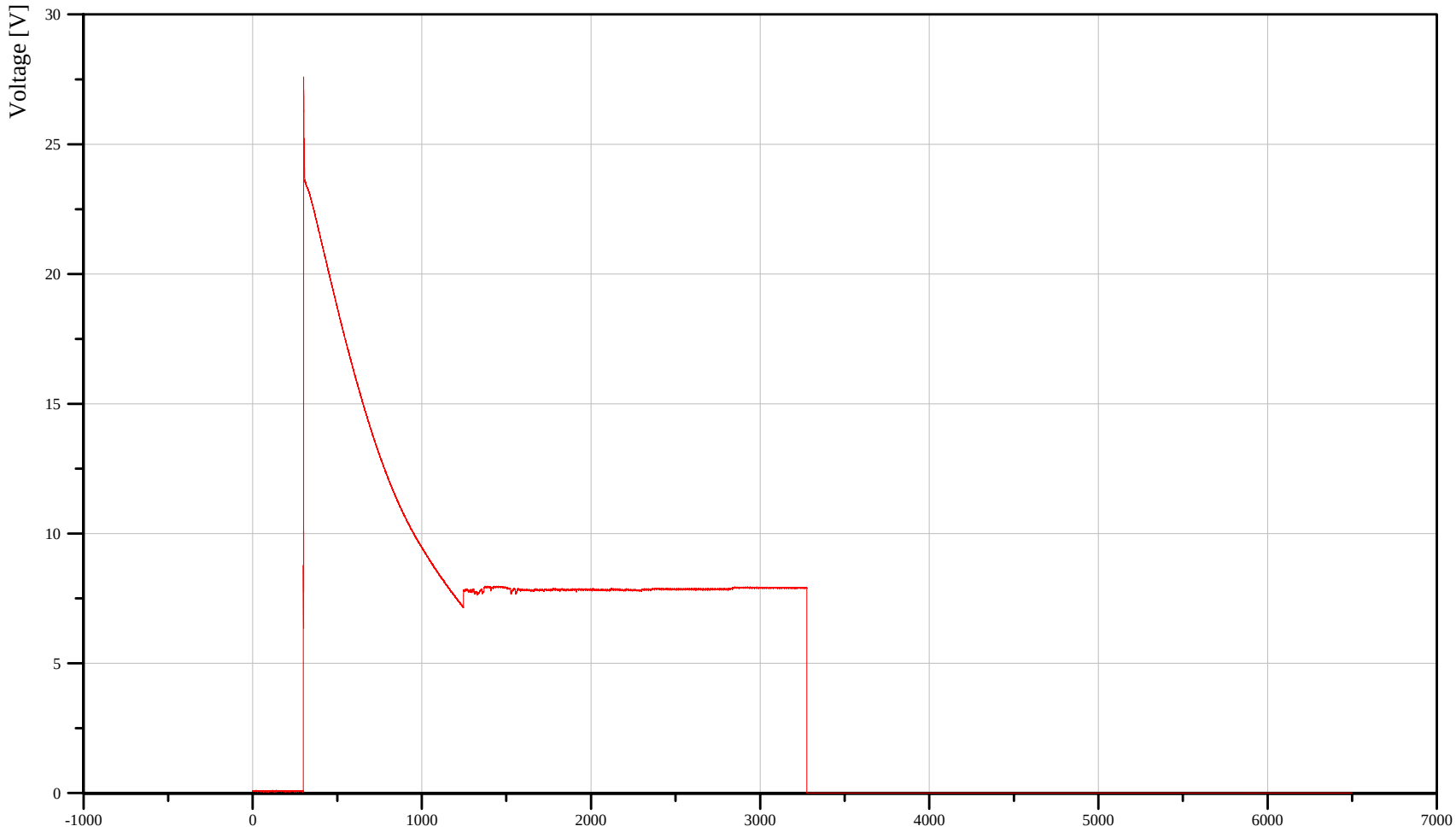
Left Side Curtain Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11AIRB000000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 3,276.08 ms

Max. Value
27.59 V at 301.44 ms

FMVSS 208 Rollover 2007 Ford Expedition

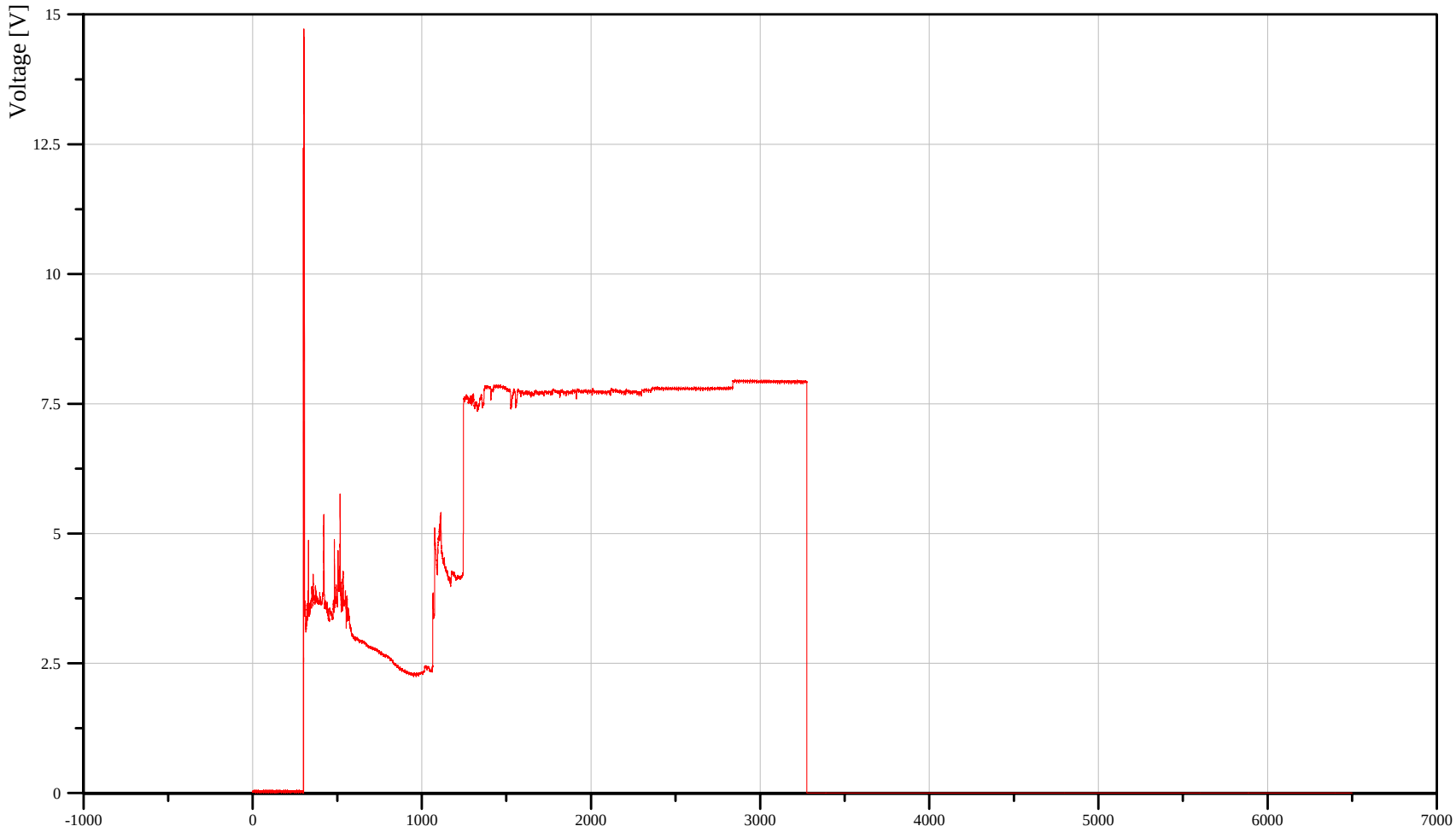
Right Side Curtain Voltage

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13AIRB000000VO0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 V at 17.76 ms

Max. Value
14.72 V at 303.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

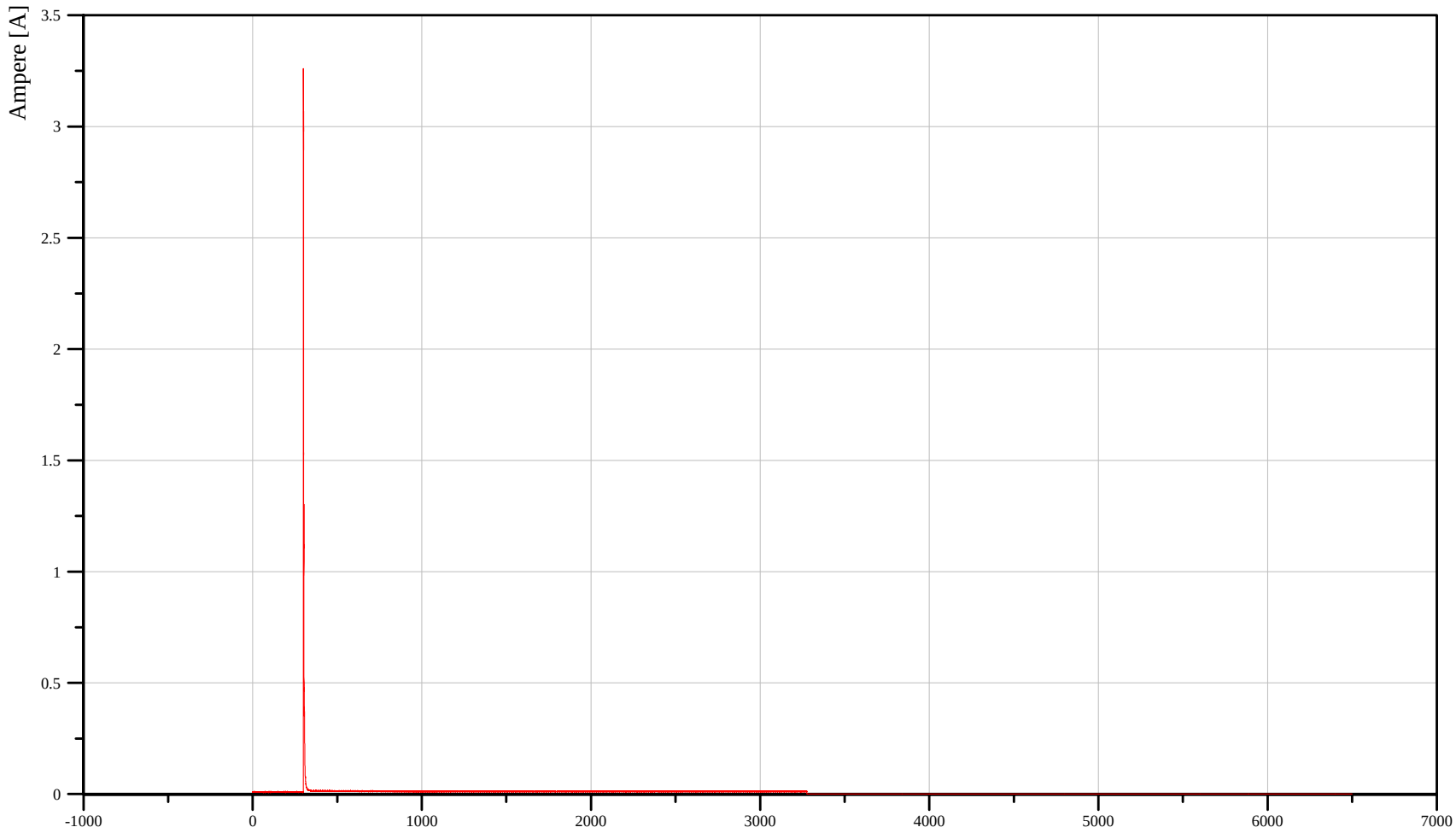
Left Side Curtain Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11AIRB000000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 3,276.08 ms

Max. Value
3.26 A at 300.40 ms

FMVSS 208 Rollover 2007 Ford Expedition

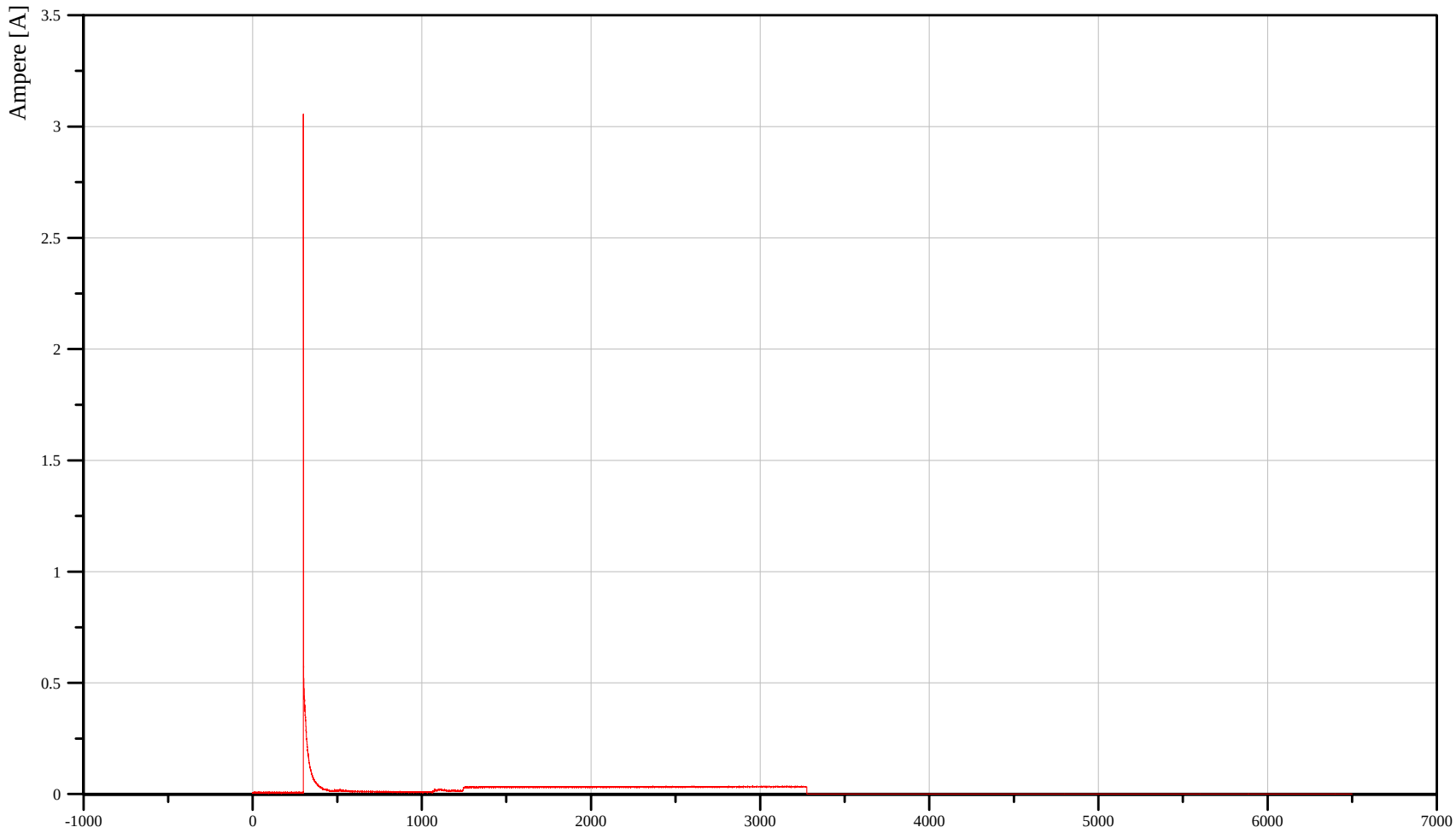
Left Rear Buckle Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11AIRB020000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 3,276.08 ms

Max. Value
3.06 A at 300.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

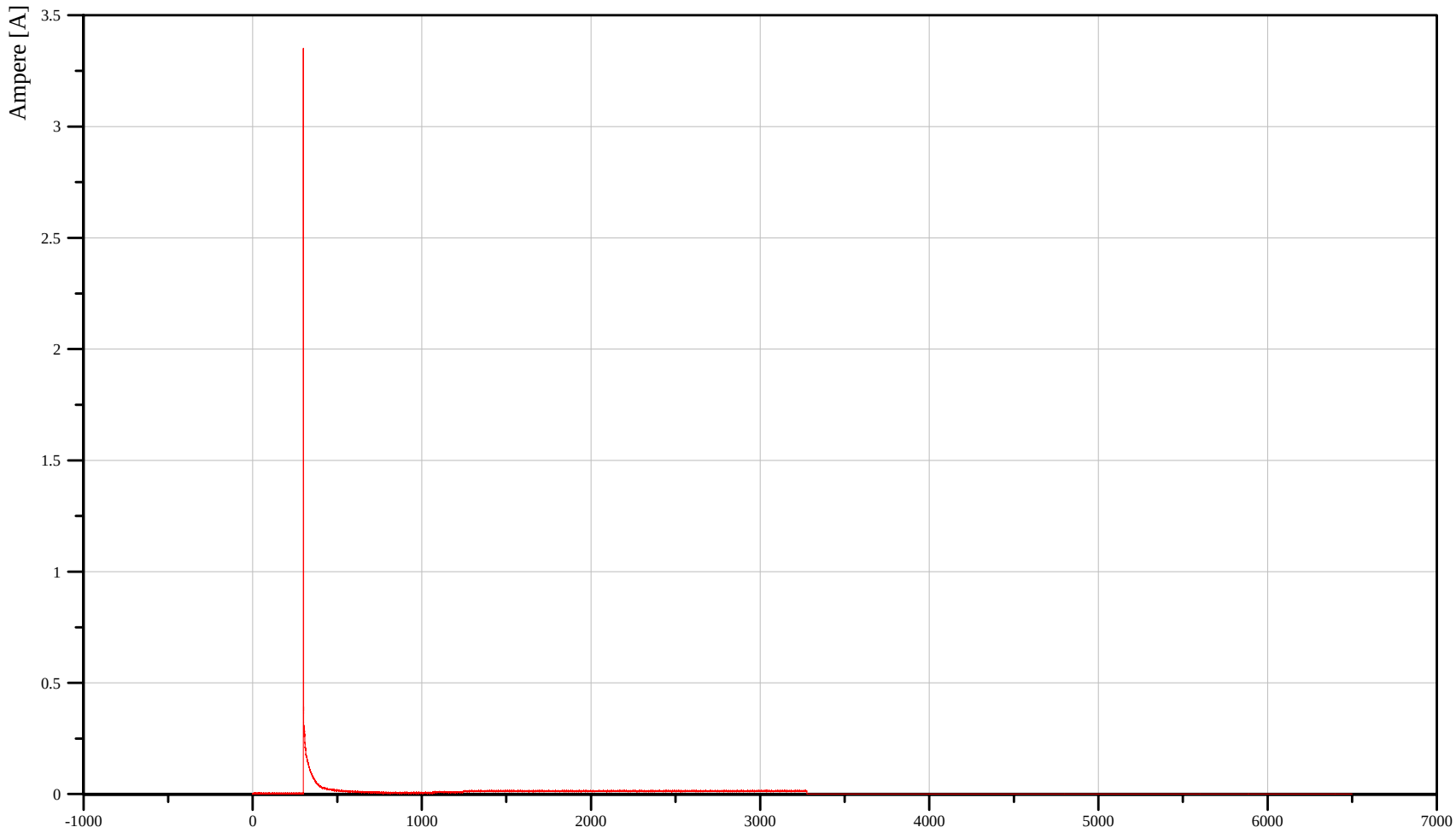
Driver Buckle Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

11BCKLIN0000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 7.28 ms

Max. Value
3.35 A at 300.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

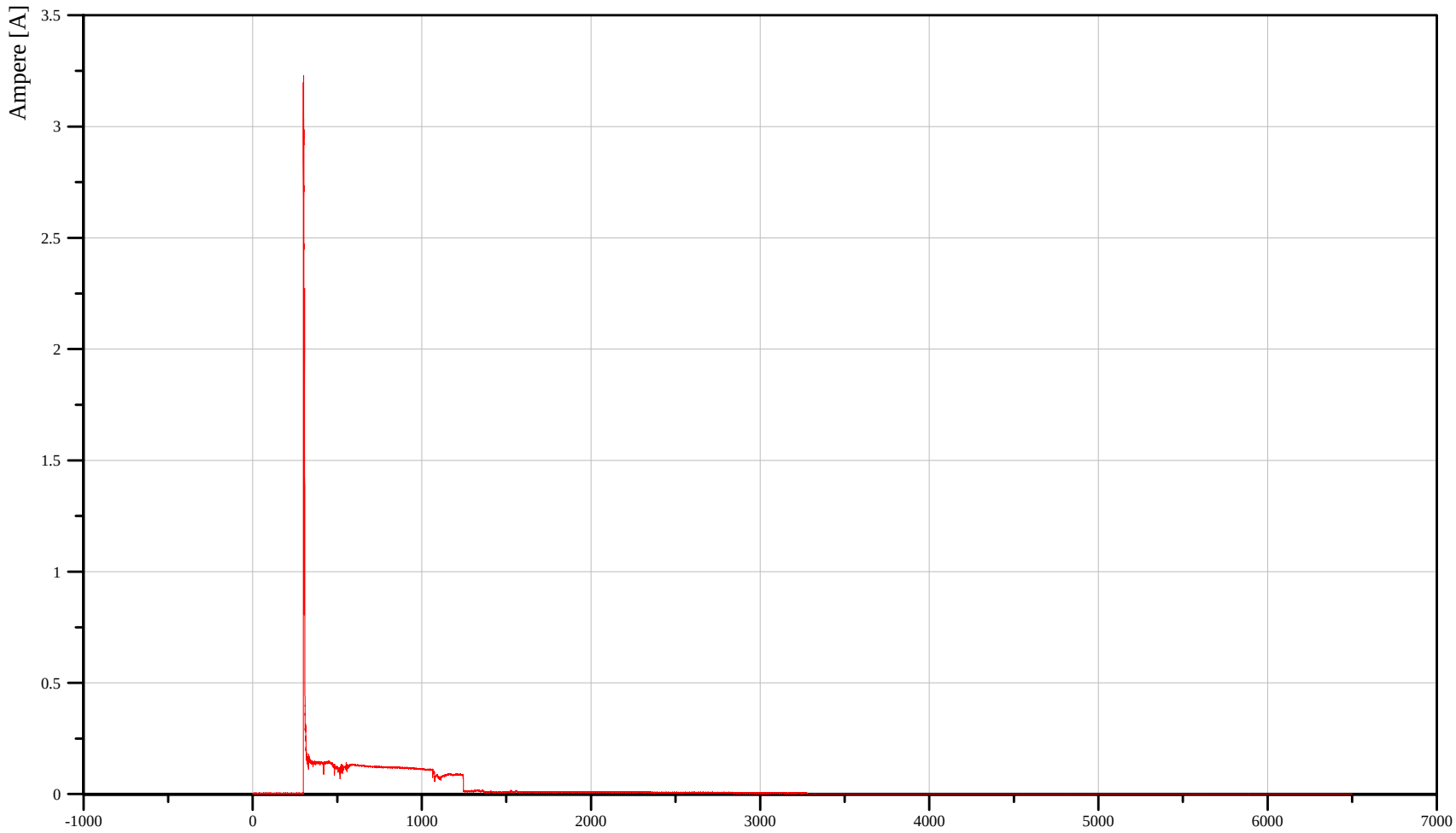
Right Side Curtain Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13AIRB000000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 17.76 ms

Max. Value
3.23 A at 300.56 ms

FMVSS 208 Rollover 2007 Ford Expedition

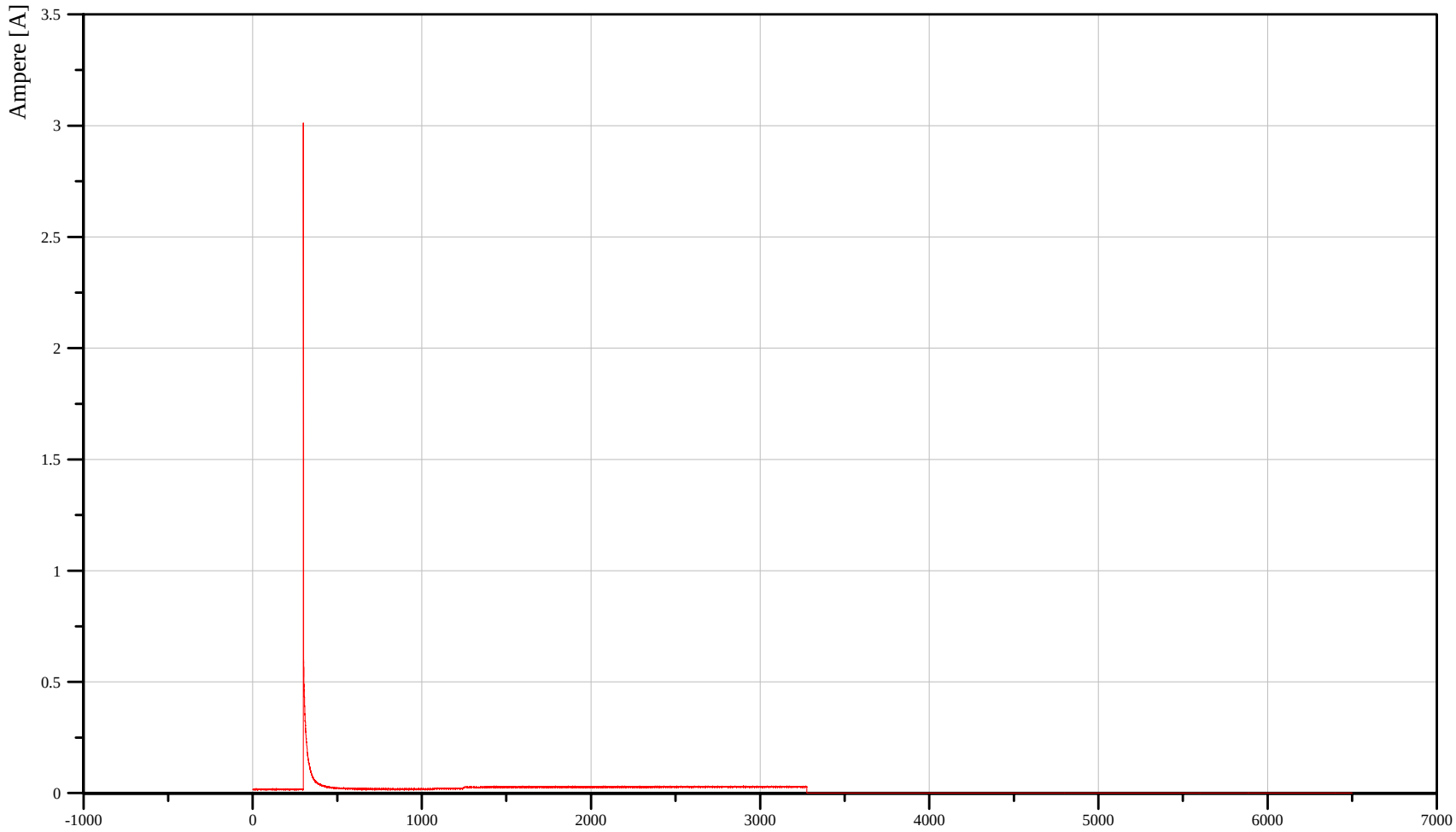
Right Front Passenger Inner Buckle Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13BCKLIN0000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 3,276.08 ms

Max. Value
3.01 A at 300.32 ms

FMVSS 208 Rollover 2007 Ford Expedition

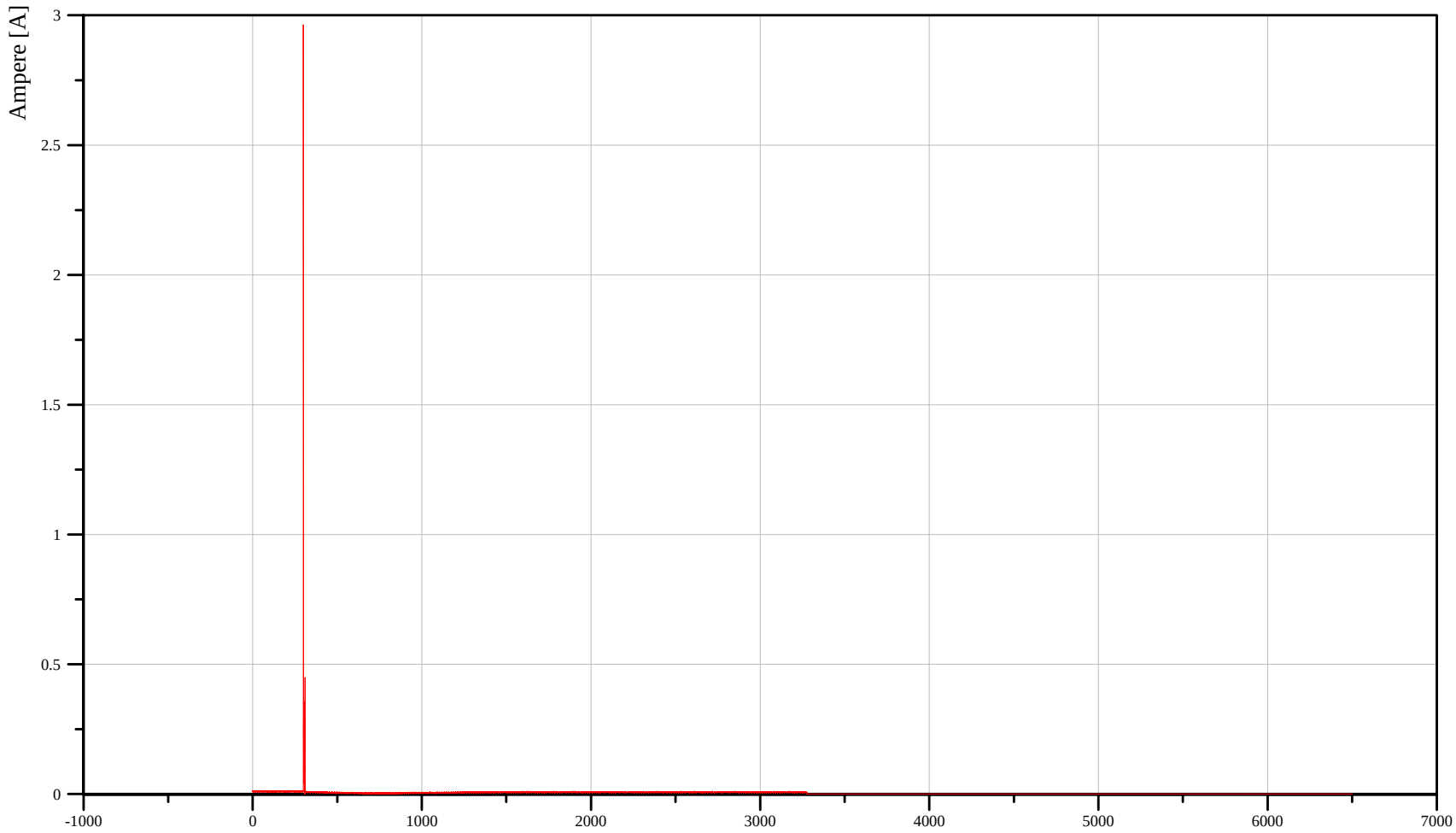
Right Front Passenger Retractor Current

Date: 11/18/2009
Time: 16:53

Customer: VRTC

13RETR000000CU0A

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_1000

Min. Value
0.00 A at 310.00 ms

Max. Value
2.96 A at 300.32 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

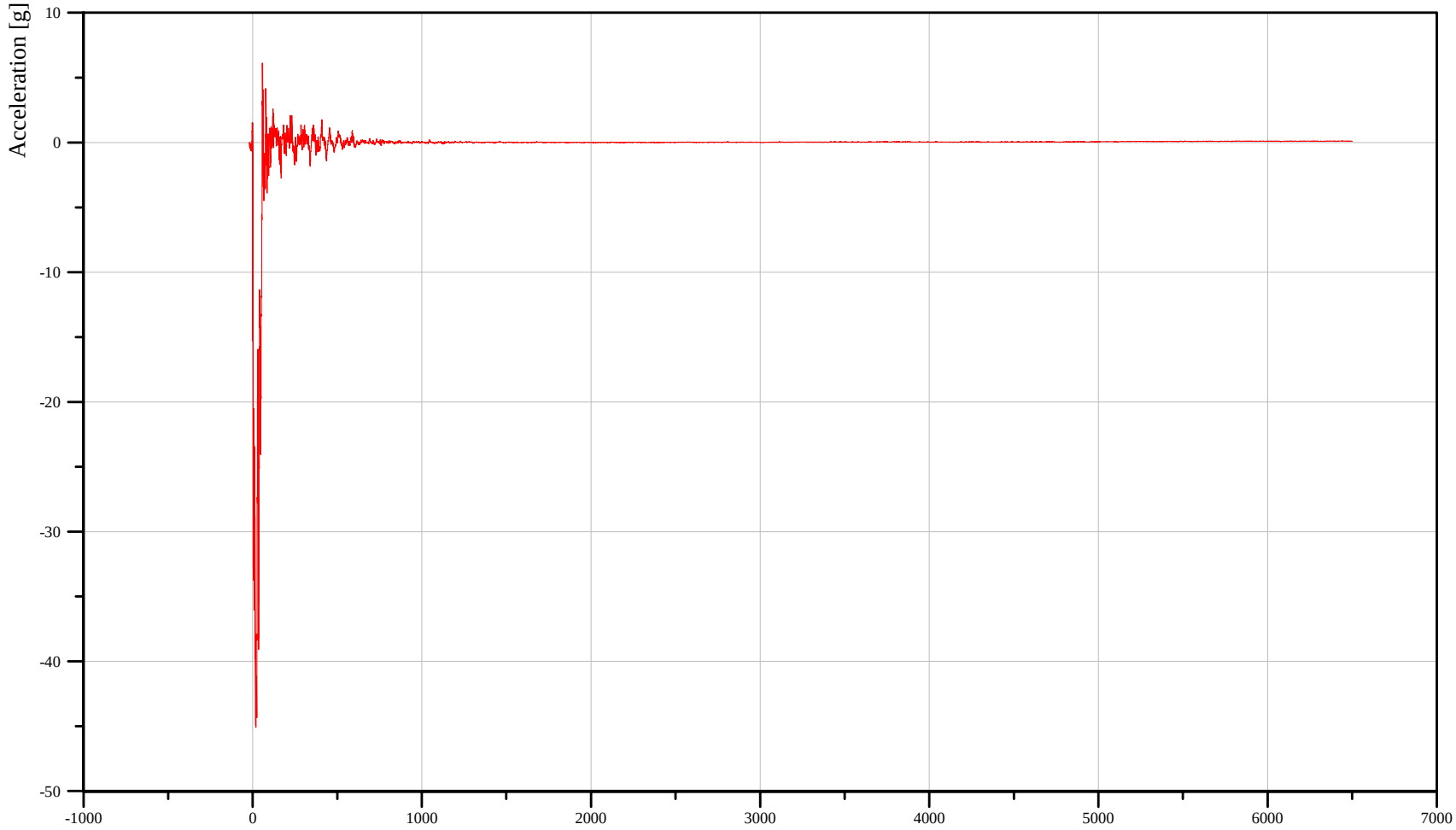
Cart X-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

M2VEHC000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-45.07 g at 18.08 ms

Max. Value
6.12 g at 57.28 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

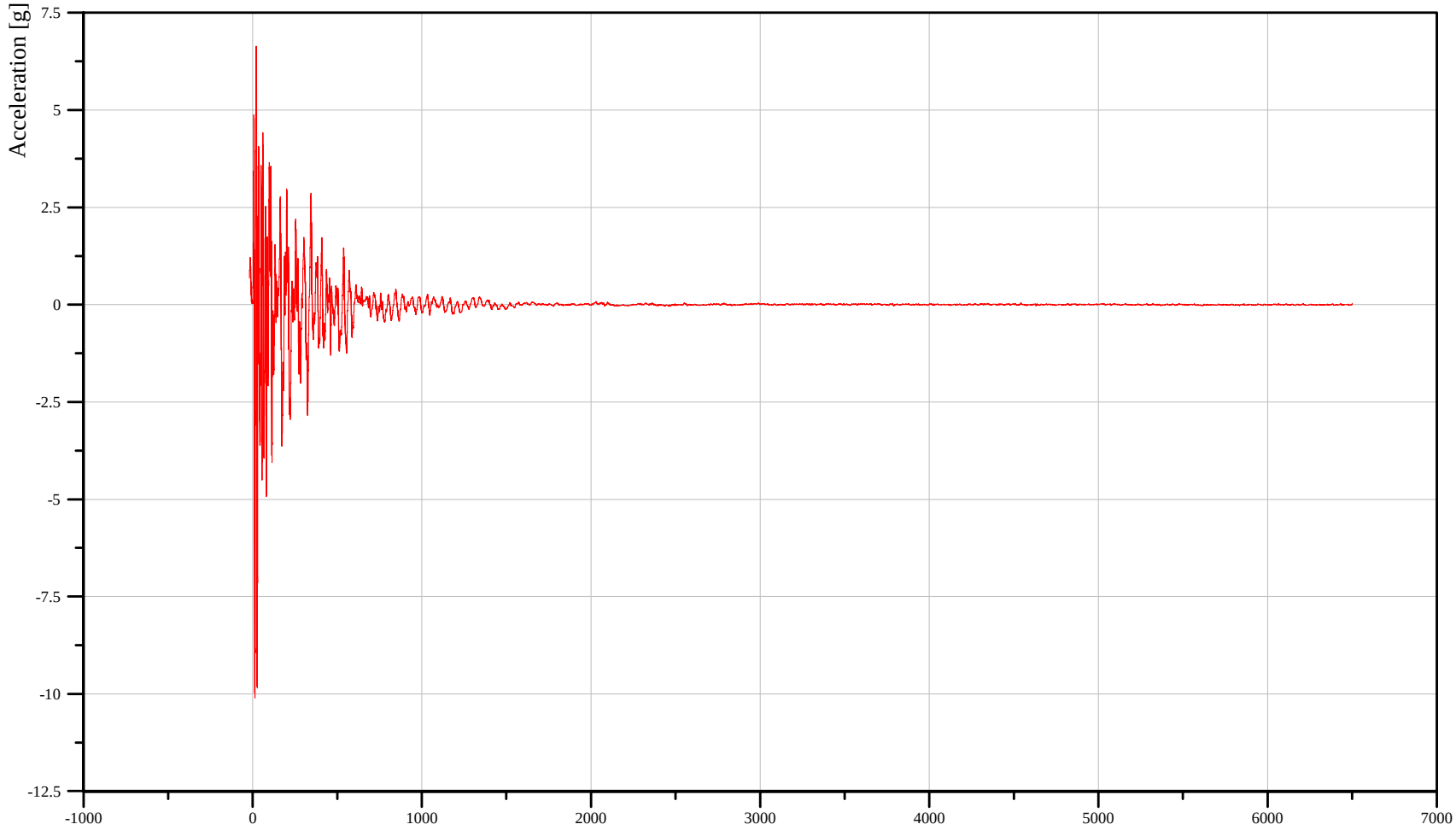
Cart Y-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

M2VEHC000000ACYD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-10.10 g at 12.80 ms

Max. Value
6.65 g at 19.68 ms

091118

FMVSS 208 Rollover 2007 Ford Expedition

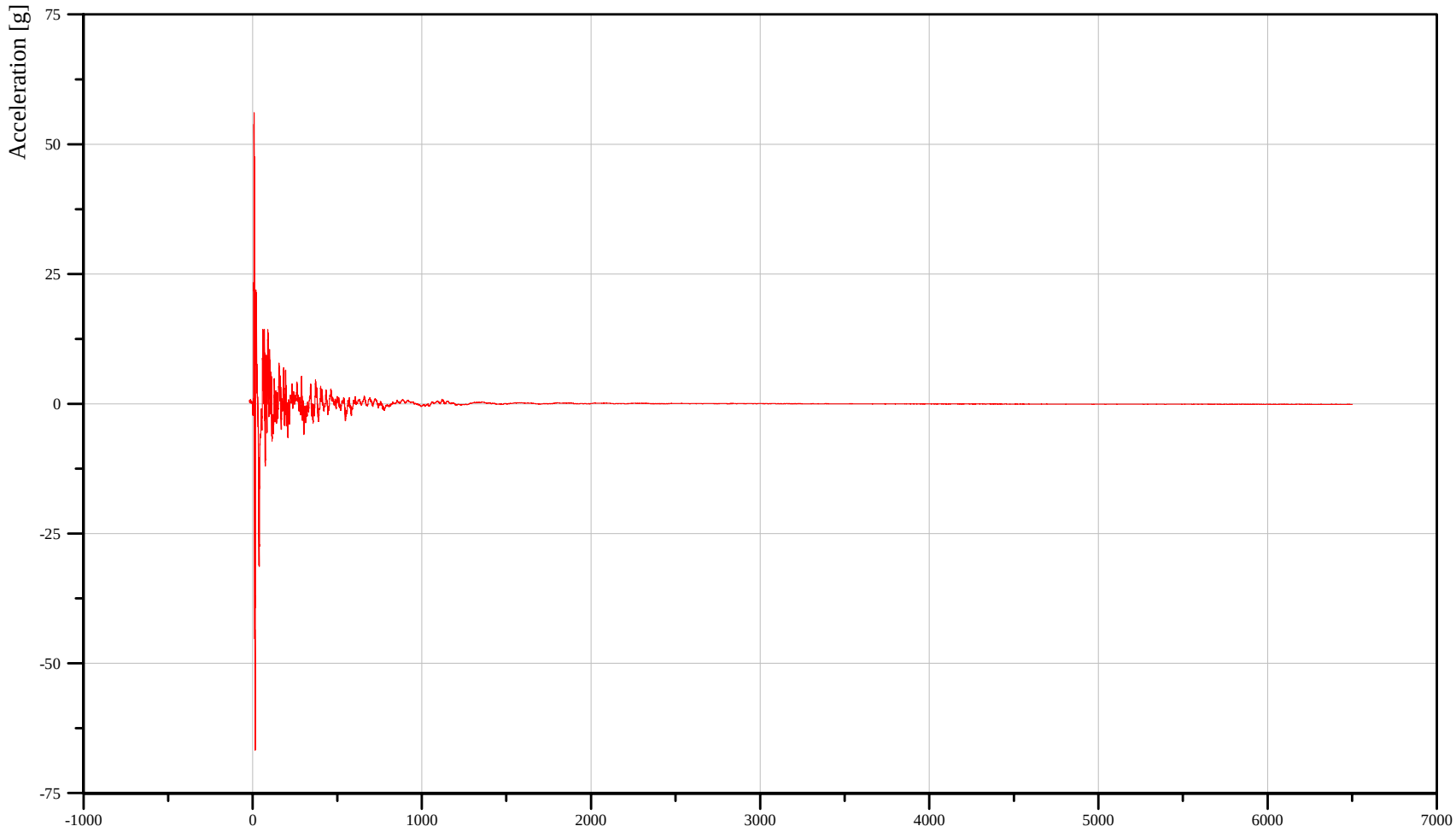
Cart Z-Axis Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

M2VEHC000000ACZD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
-66.72 g at 14.08 ms

Max. Value
56.06 g at 7.52 ms

FMVSS 208 Rollover 2007 Ford Expedition

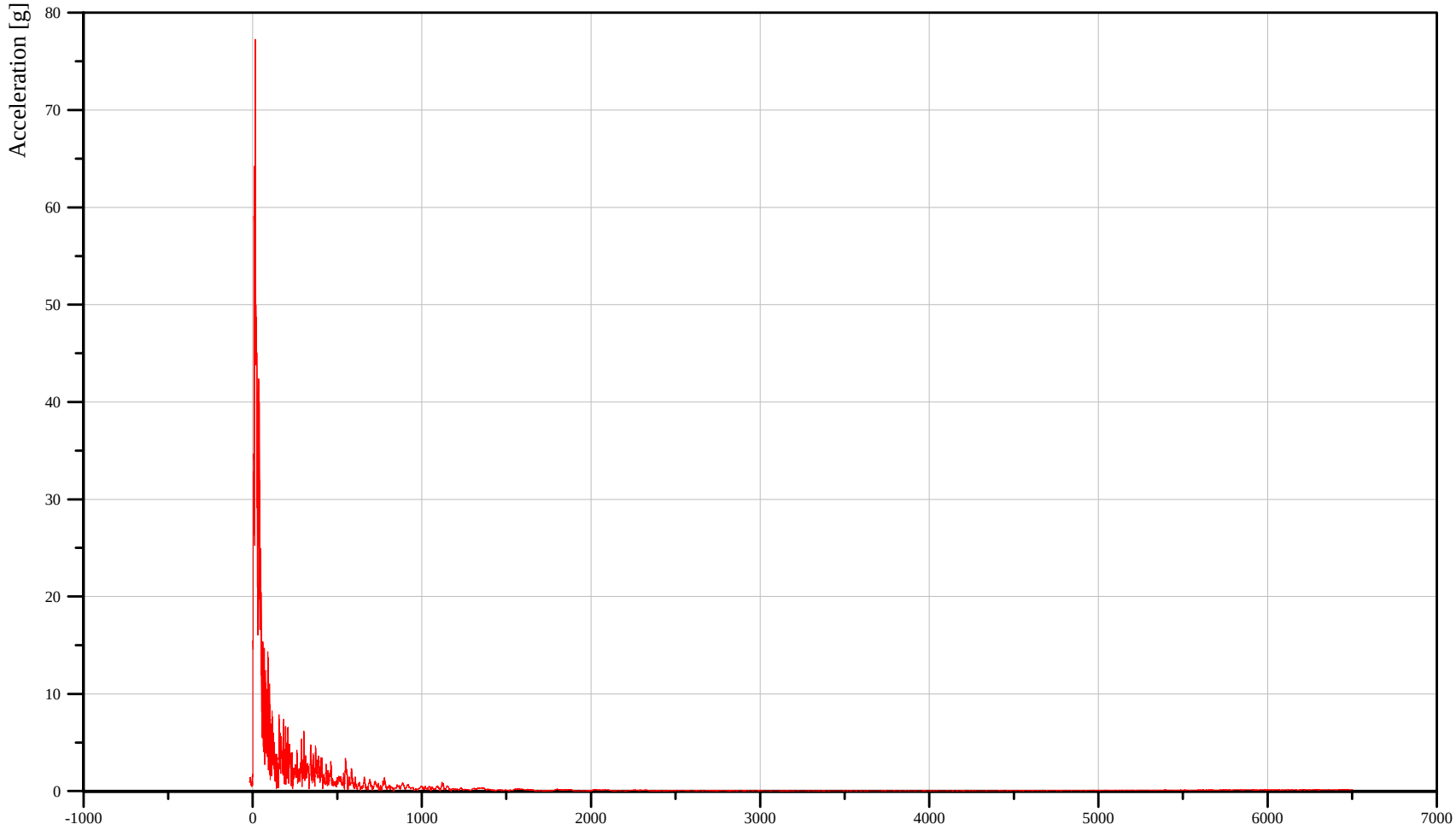
Cart Resultant Acceleration

Date: 11/18/2009
Time: 16:53

Customer: VRTC

M2VEHC000000ACRD

TRC Inc. Test Lab: CTF
Test Number: 091118



Filter: CFC_60

Min. Value
0.00 g at 1,727.92 ms

Max. Value
77.26 g at 14.08 ms

091118

APPENDIX C
ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Calibration Test Results

Pre-Test

Driver Dummy S/N: 001

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 001 Calibration No. 12

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	883	Yes
B	Shoulder Pivot Height	505.5 - 520.7	516	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	153	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	297	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	339	Yes
J	Elbow Rest Height	190.5 - 210.8	200	Yes
K	Buttock Knee Length	579.1 - 604.5	597	Yes
L	Popliteal Height	429.3 - 454.7	437	Yes
M	Knee Pivot Height	485.1 - 500.4	498	Yes
N	Buttock Popliteal Length	452.1 - 477.5	465	Yes
O	Chest Depth	213.4 - 228.6	228	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	429	Yes
W	Foot Breadth	91.4 - 106.7	99	Yes
Y	Chest Circumference	970.3 - 1000.8	995	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician

Approved

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	271.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	11.3 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

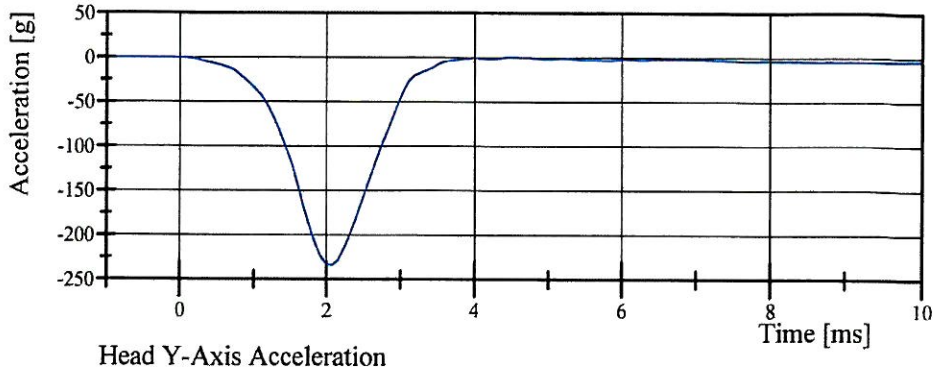
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 10:17:54 611

Transportation Research Center Inc.

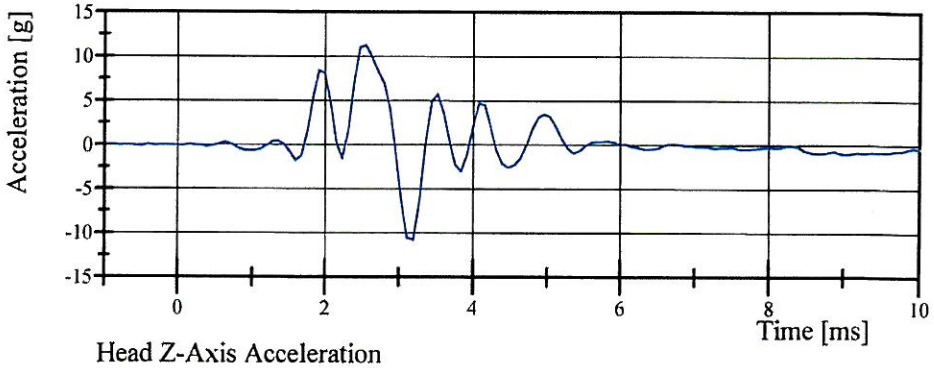
Front Head Drop
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Head X-Axis Acceleration



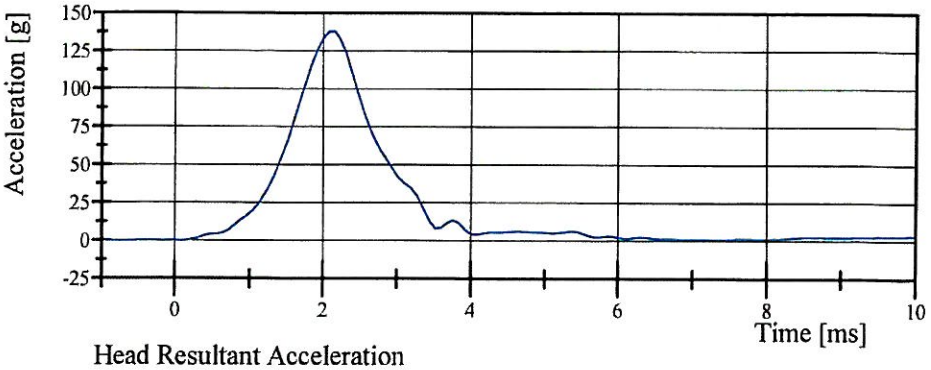
Filter Class: CFC_1000
Max: 0.7 g at 4.5 ms
Min: -234.1 g at 2.1 ms

Head Y-Axis Acceleration



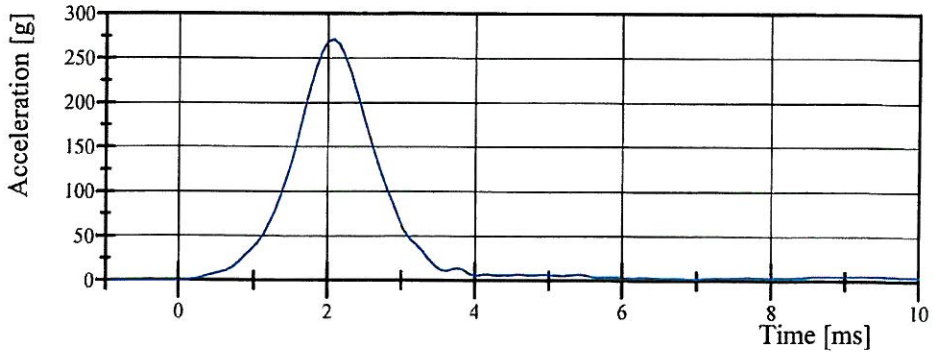
Filter Class: CFC_1000
Max: 11.3 g at 2.6 ms
Min: -10.8 g at 3.2 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 138.0 g at 2.2 ms
Min: -0.1 g at -1.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 271.7 g at 2.1 ms
Min: 0.0 g at 0.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 10:18:01 611

Transportation Research Center Inc.

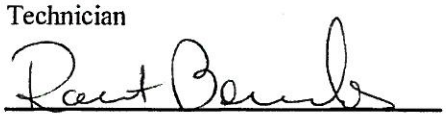
Neck Flexion
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.928 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	36.2 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-26.91 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-22.39 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-18.01 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-18.01 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-70.2 °	Yes
Total Head D-Plane Rotation Time of Peak	57 - 64 ms	58.7 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	115.0 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	102.3 N·m	Yes
Total Neck Occipital Condyles Moment Time of Peak	47 - 58 ms	49.8 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	97.0 ms	Yes

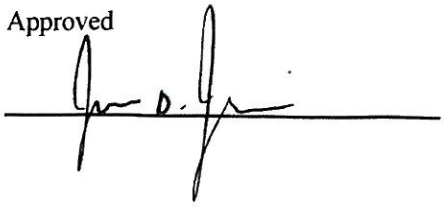
Test meets specifications.

Comments:

Technician



Approved



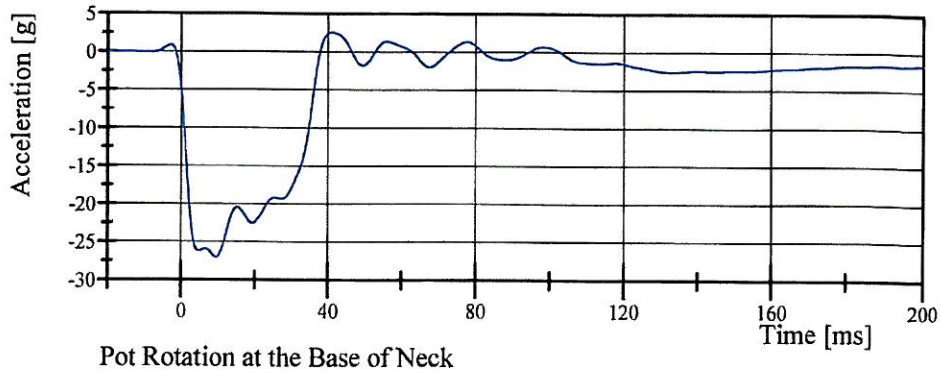
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 11:30:15 2963

Transportation Research Center Inc.

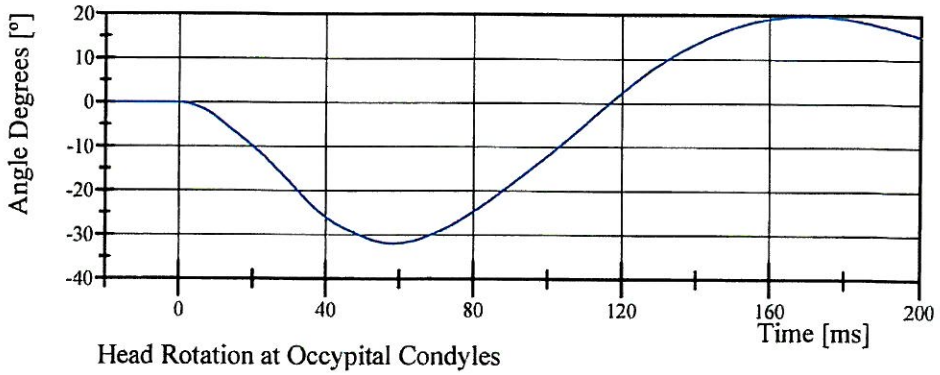
Neck Flexion
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Pendulum Acceleration



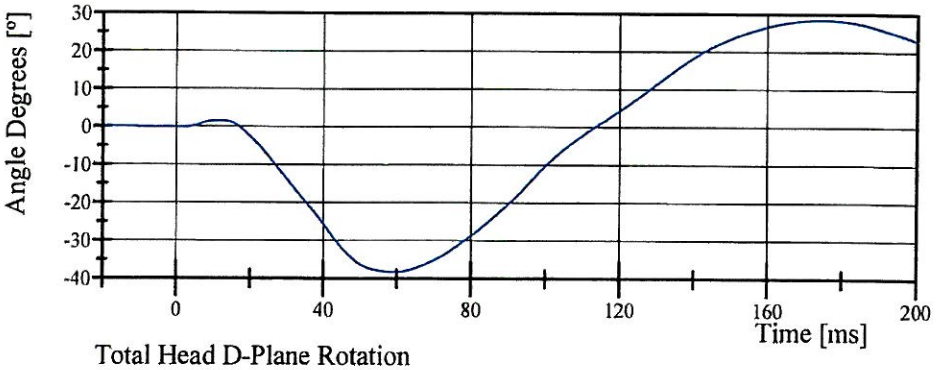
Filter Class: CFC_60
Max: 2.6 g at 41.0 ms
Min: -27.0 g at 9.5 ms

Pot Rotation at the Base of Neck



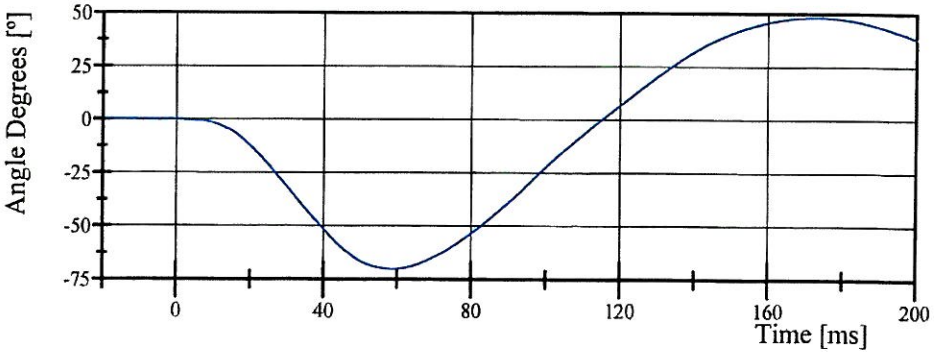
Filter Class: CFC_60
Max: 19.9 ° at 169.6 ms
Min: -32.0 ° at 58.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 28.5 ° at 174.6 ms
Min: -38.3 ° at 59.3 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 48.3 ° at 172.9 ms
Min: -70.2 ° at 58.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 11:30:22 2963

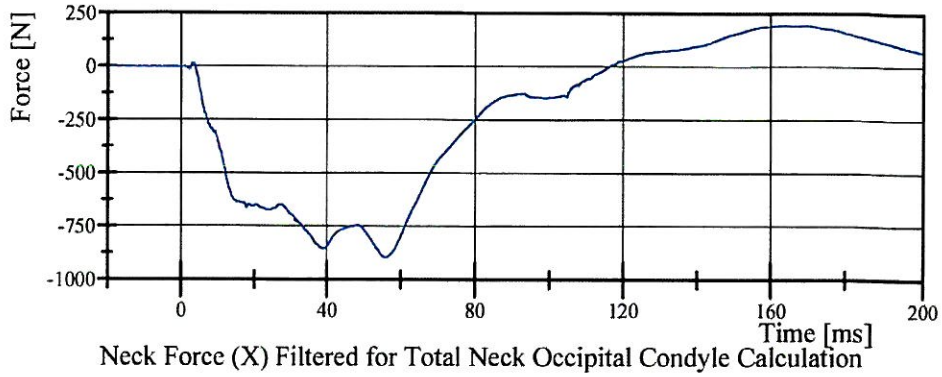
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 001 Certification No. 12-2

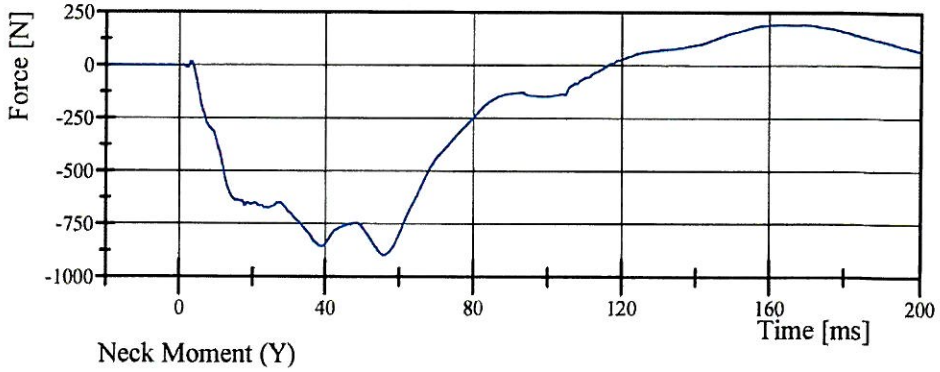
Test Date: 10/28/2009

Neck Force (X)



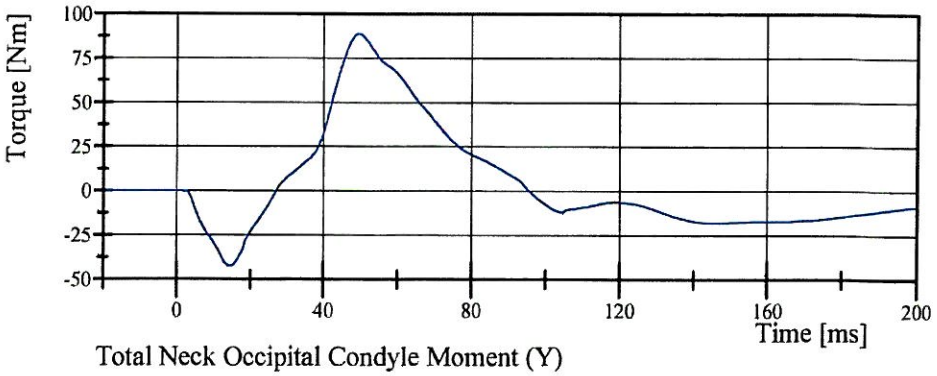
Filter Class: CFC_1000
Max: 196.5 N at 163.9 ms
Min: -896.1 N at 55.8 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



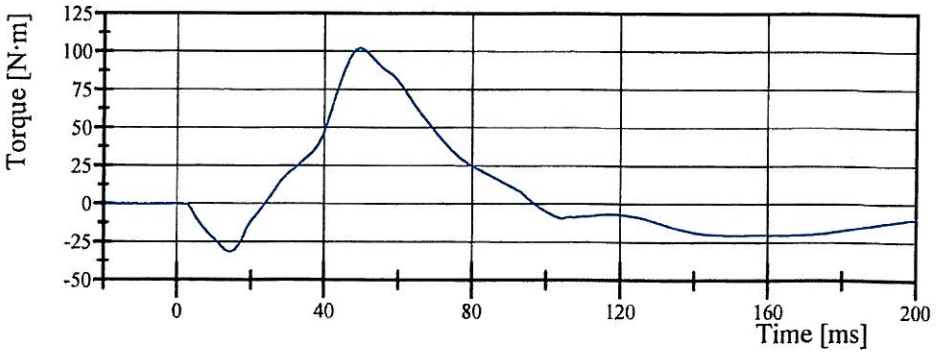
Filter Class: CFC_600
Max: 195.7 N at 163.9 ms
Min: -895.7 N at 55.8 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 89.0 Nm at 49.5 ms
Min: -42.4 Nm at 14.4 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 102.3 N·m at 49.8 ms
Min: -31.5 N·m at 14.2 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 11:30:23 2963

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.990 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	44.6 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	18.36 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.29 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	12.67 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	12.67 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	88.2 °	Yes
Time of Peak	72 - 82 ms	76.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	153.8 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-62.6 N·m	Yes
Time of Peak	65 - 79 ms	65.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	140.6 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.28.2009 12:30:03 3050

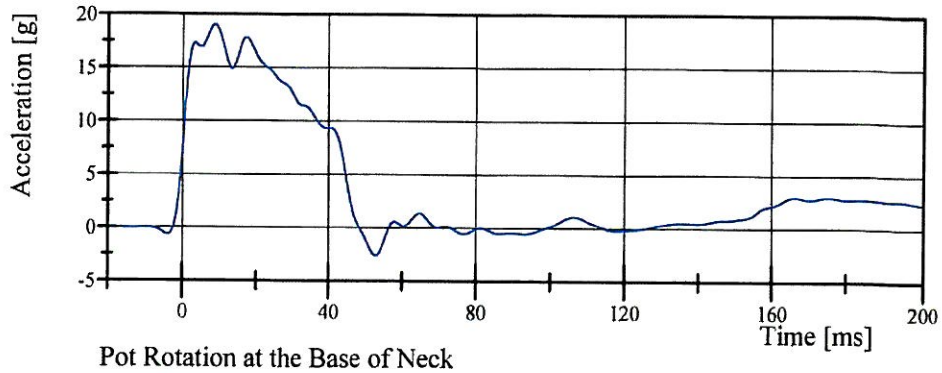
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 001 Certification No. 12-1

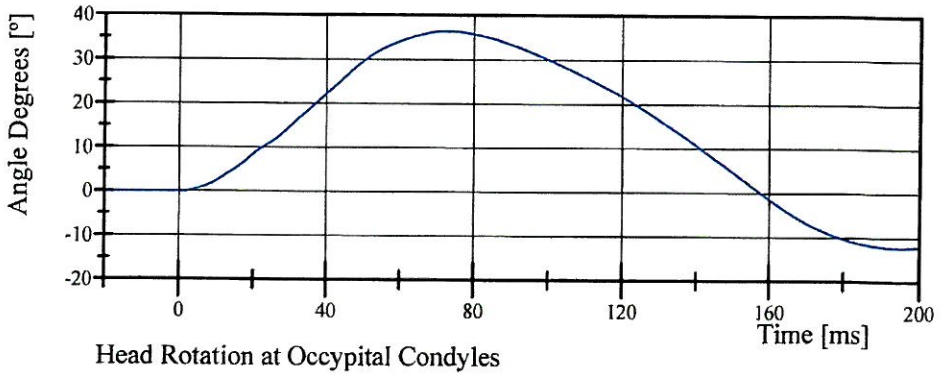
Test Date: 10/28/2009

Pendulum Acceleration



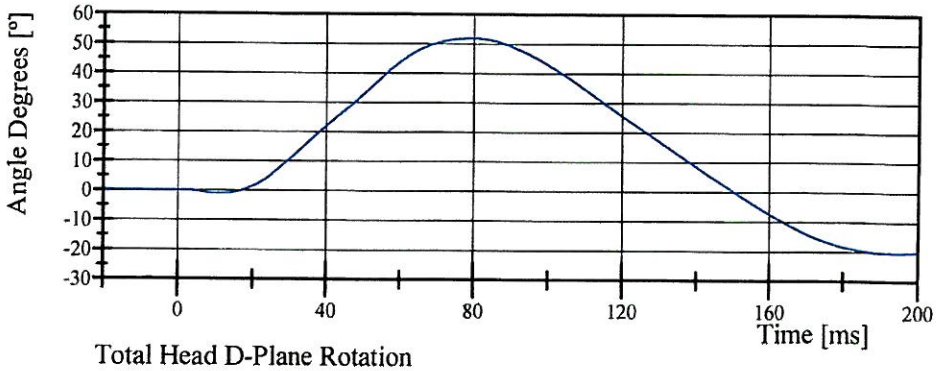
Filter Class: CFC_60
Max: 19.0 g at 8.6 ms
Min: -2.6 g at 52.9 ms

Pot Rotation at the Base of Neck



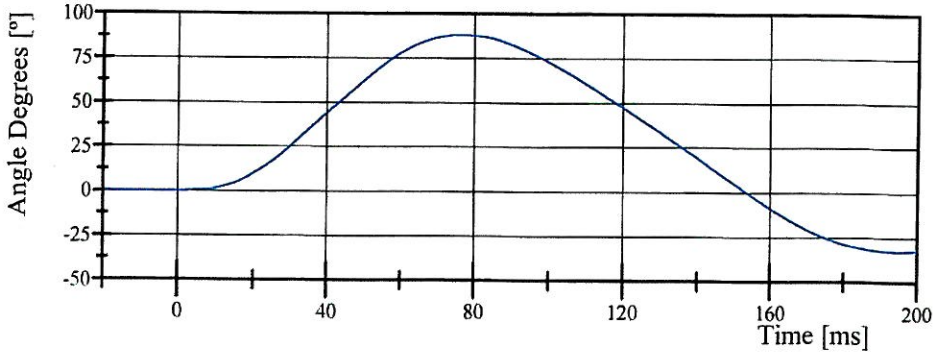
Filter Class: CFC_60
Max: 36.5 ° at 73.0 ms
Min: -12.2 ° at 195.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 52.0 ° at 79.8 ms
Min: -20.3 ° at 194.6 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 88.2 ° at 76.4 ms
Min: -32.5 ° at 195.0 ms

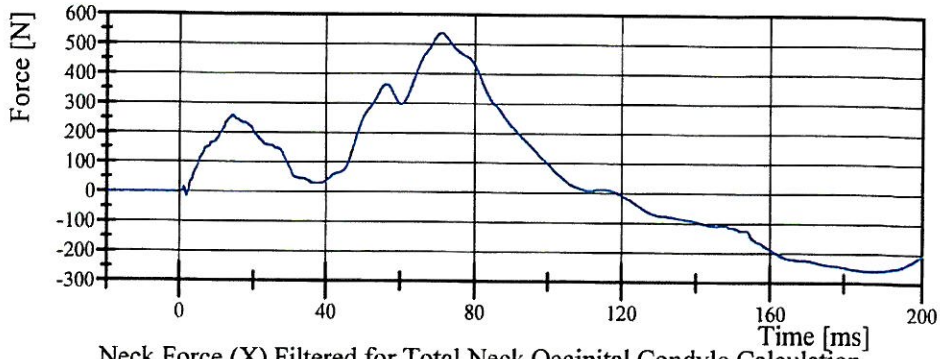
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 12:30:10 3050

Transportation Research Center Inc.

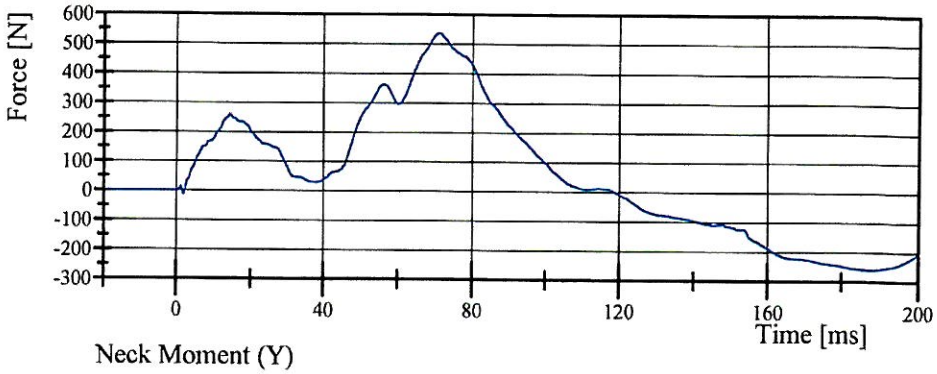
Neck Extension
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Neck Force (X)



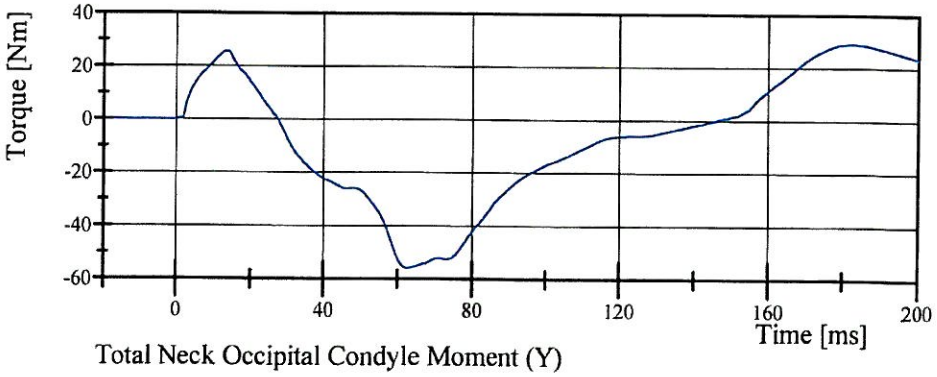
Filter Class: CFC_1000
Max: 539.5 N at 71.0 ms
Min: -259.2 N at 188.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



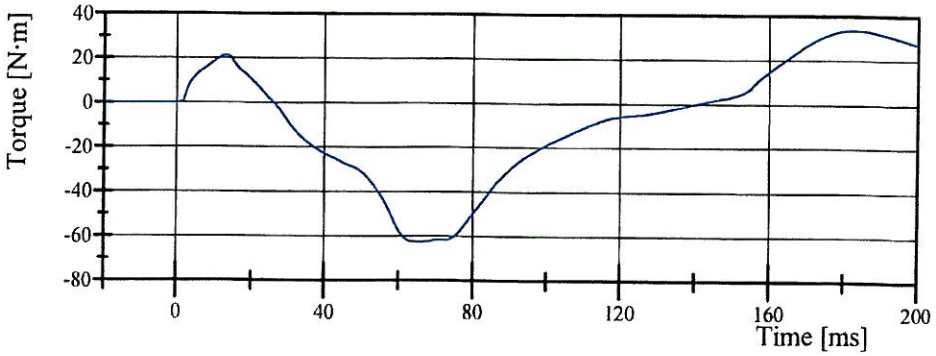
Filter Class: CFC_600
Max: 539.2 N at 71.0 ms
Min: -258.4 N at 188.0 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 29.2 Nm at 182.3 ms
Min: -55.9 Nm at 62.9 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 33.7 N·m at 183.1 ms
Min: -62.6 N·m at 65.3 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 12:30:11 3050

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.622 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,661.4 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-68.08 mm	Yes
Internal Hysteresis	65 - 85 %	71.9 %	Yes

Test meets specifications.

Comments:

Technician

Approved

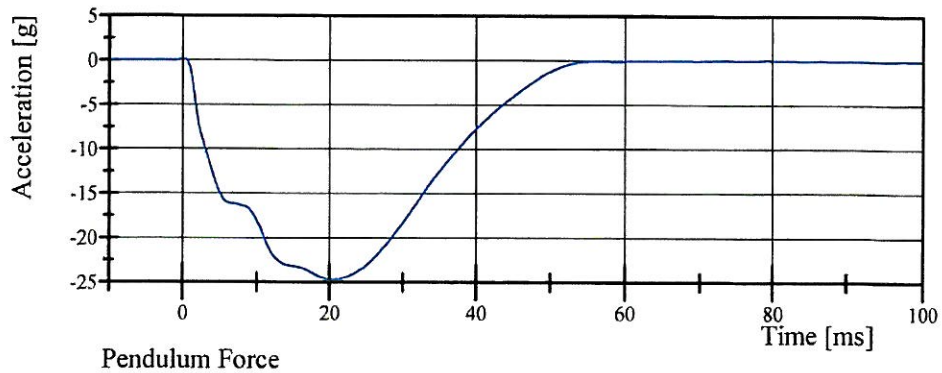
Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.28.2009 15:06:48 381

Transportation Research Center Inc.

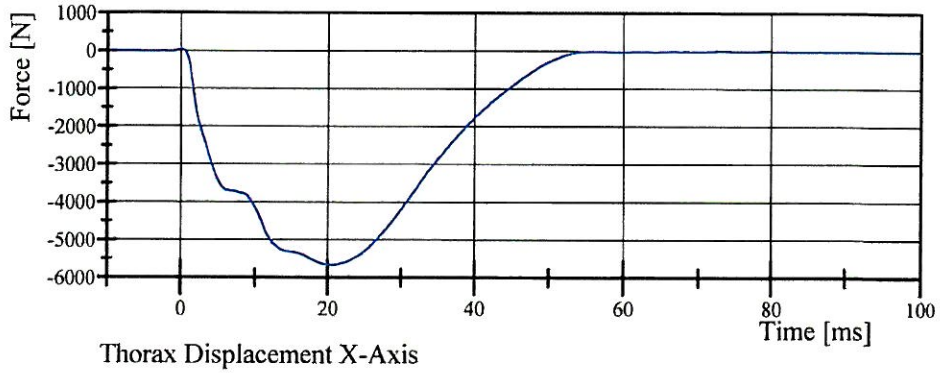
Front Thorax
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Pendulum Acceleration



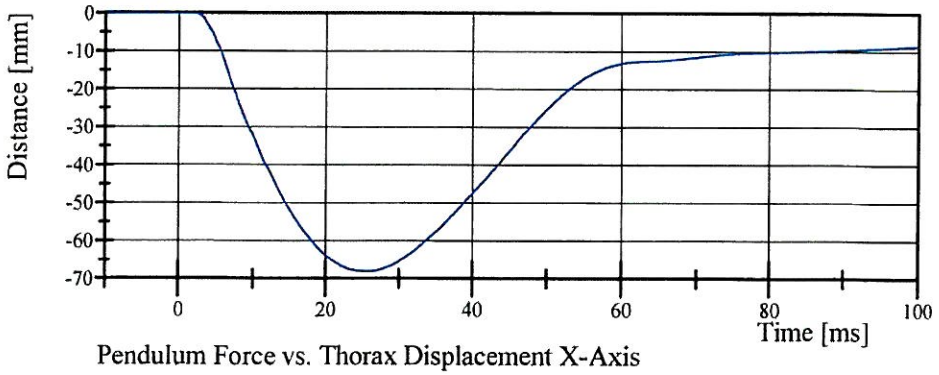
Filter Class: CFC_180
Max: 0.2 g at 0.1 ms
Min: -24.7 g at 20.7 ms

Pendulum Force



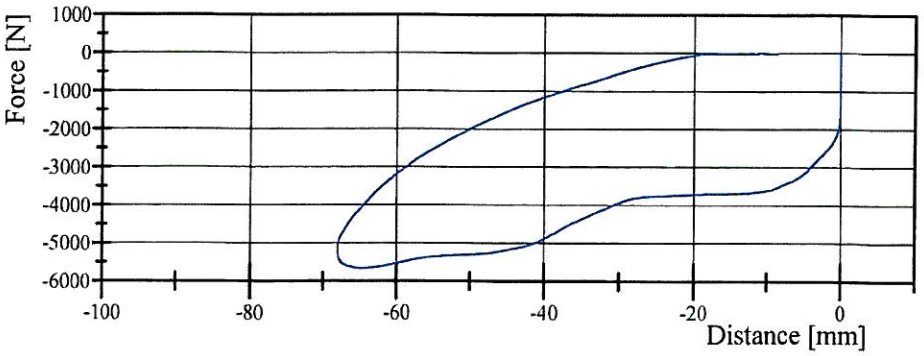
Filter Class: CFC_180
Max: 43.9 N at 0.1 ms
Min: -5,661.4 N at 20.7 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -2.2 ms
Min: -68.1 mm at 26.1 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 43.9 N at -0.0 mm
Min: -5,661.4 N at -65.0 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.28.2009 15:06:56 381

Transportation Research Center Inc

Hybrid III Hip Range of Motion

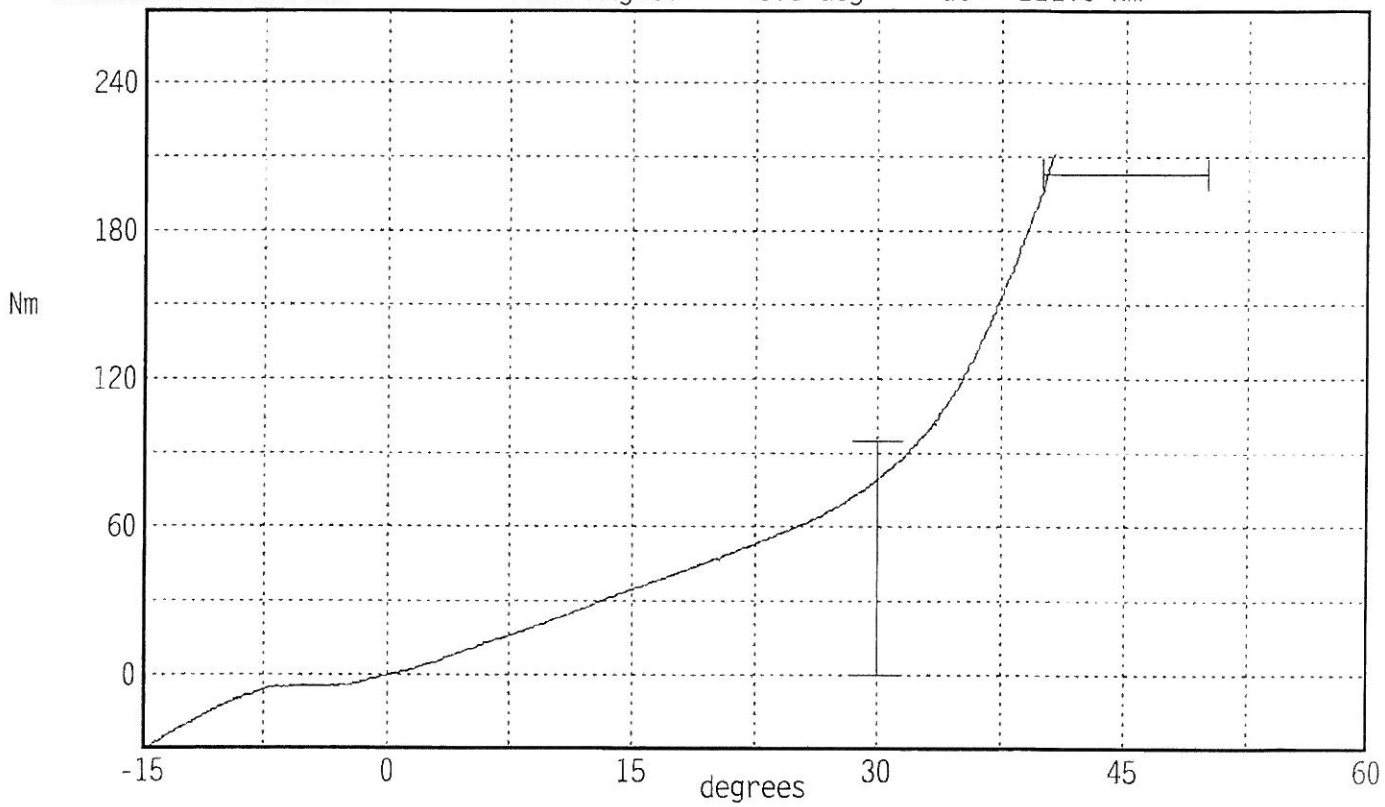
Serial Number: 001L
Test Number: 001C12
Comments:

Date: 10/28/2009
Time: 12:45

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.8	°C	Pass
Humidity	10 - 70	45	%	Pass
Moment at 30 deg	<= 94.9	79.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.4	deg	Pass
Average Velocity	5.0 - 10.0	7.5	deg/sec	Pass

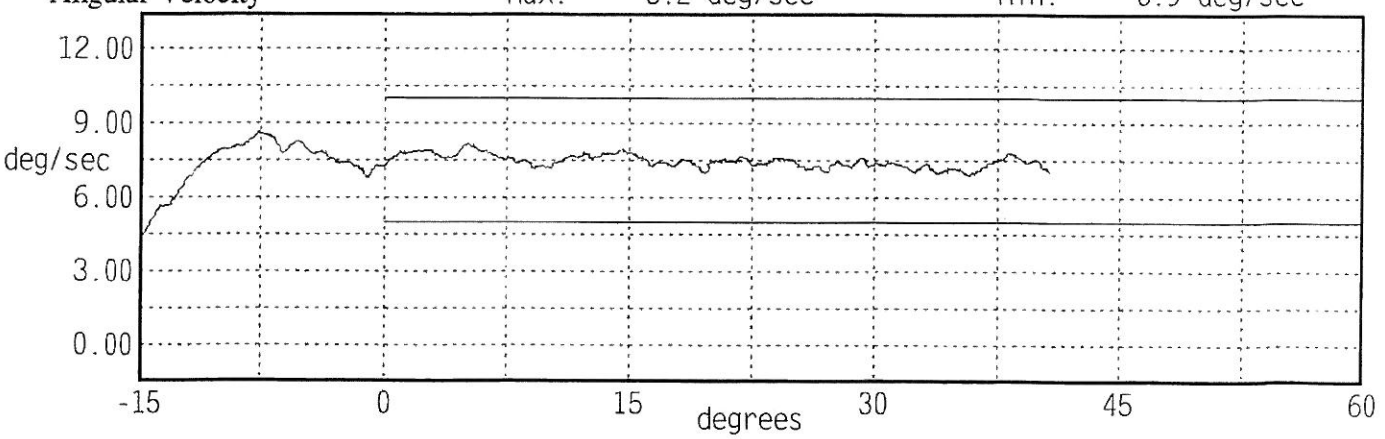
Moment About H-Point

Peak Moment: 211.0 Nm at 40.6 deg
Peak Angle: 40.6 deg at 211.0 Nm



Angular Velocity

Max: 8.2 deg/sec Min: 6.9 deg/sec



Transportation Research Center Inc

Hybrid III Hip Range of Motion

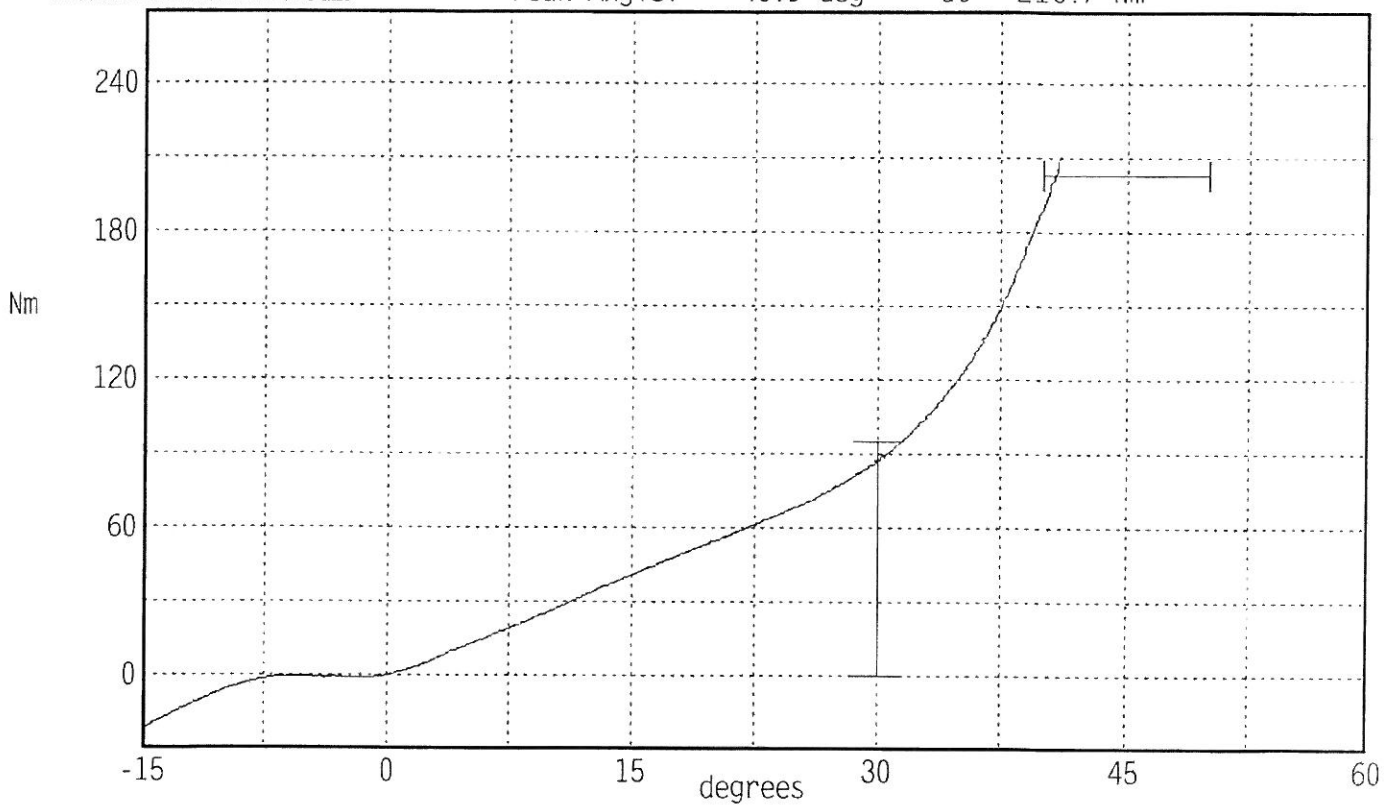
Serial Number: 001R
Test Number: 001C12
Comments:

Date: 10/28/2009
Time: 13:20

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.9	°C	Pass
Humidity	10 - 70	43	%	Pass
Moment at 30 deg	<= 94.9	87.7	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.7	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

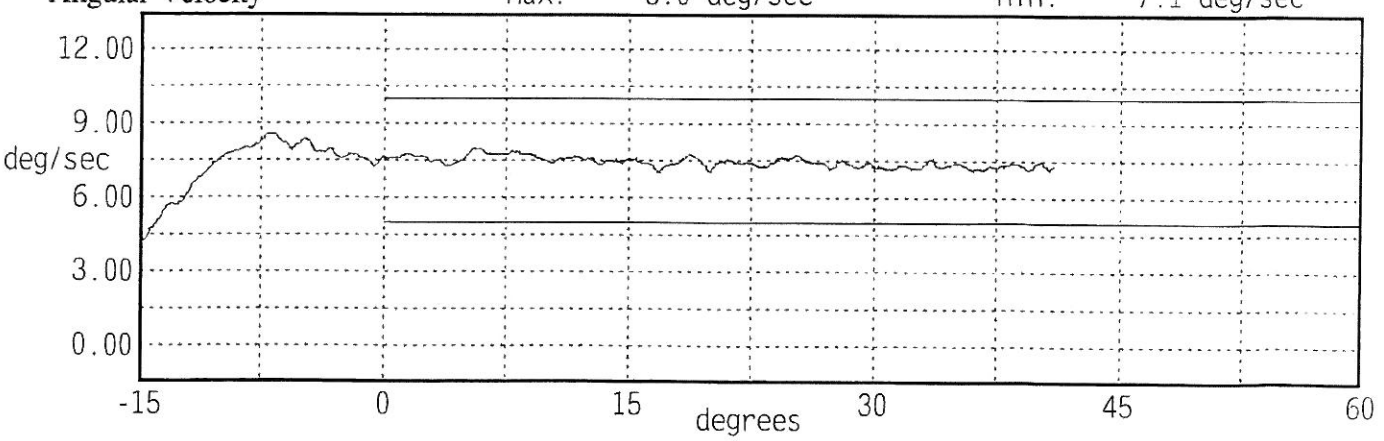
Moment About H-Point

Peak Moment: 210.7 Nm at 40.9 deg
Peak Angle: 40.9 deg at 210.7 Nm



Angular Velocity

Max: 8.0 deg/sec Min: 7.1 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.106 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,574.32 N	Yes

Test meets specifications.

Comments:

Technician

Approved

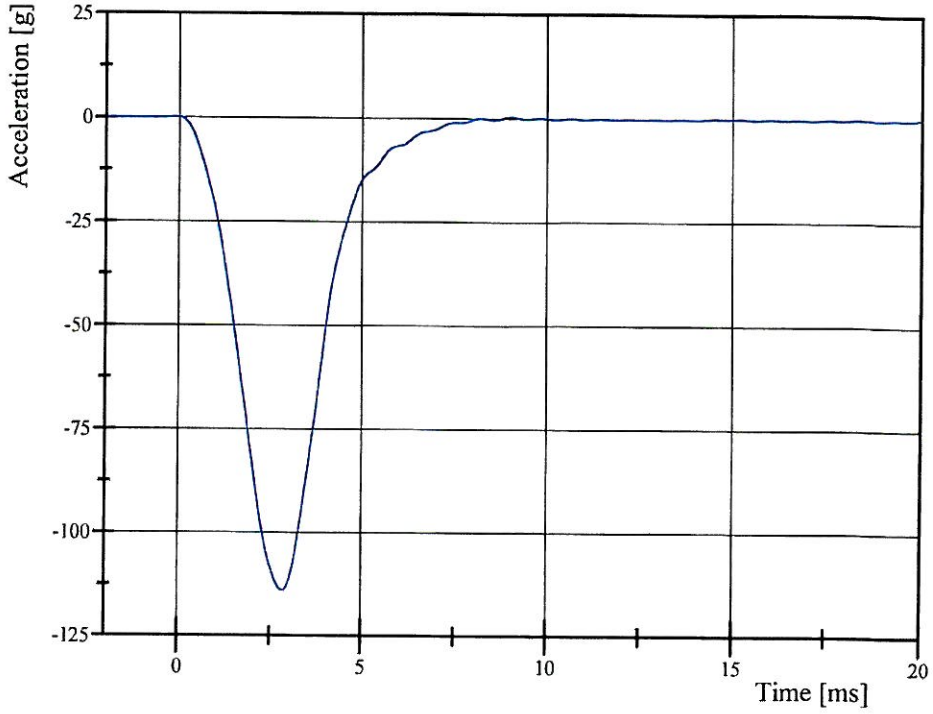
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 12:05:33 1689

Transportation Research Center Inc.

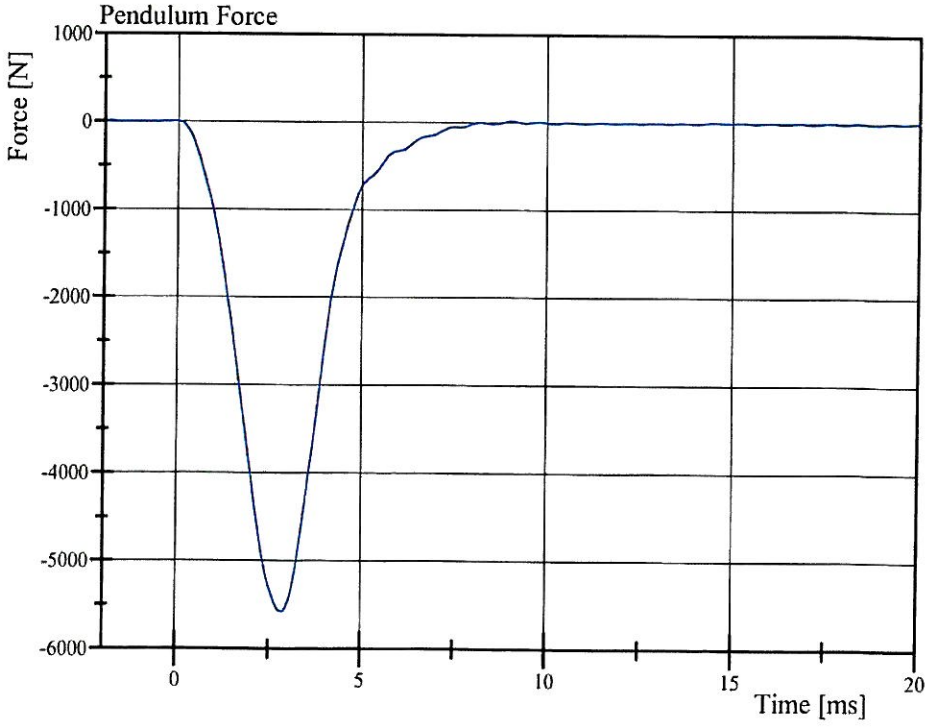
Left Knee Femur Response Test
HIII 50th Serial No. 001 Certification No. 12-2
Test Date: 10/28/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.4 g at 9.0 ms
Min: -113.9 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 19.6 N at 9.0 ms
Min: -5,574.3 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 12:05:40 1689

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.102 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-4,962.01 N	Yes

Test meets specifications.

Comments:

Technician

Approved

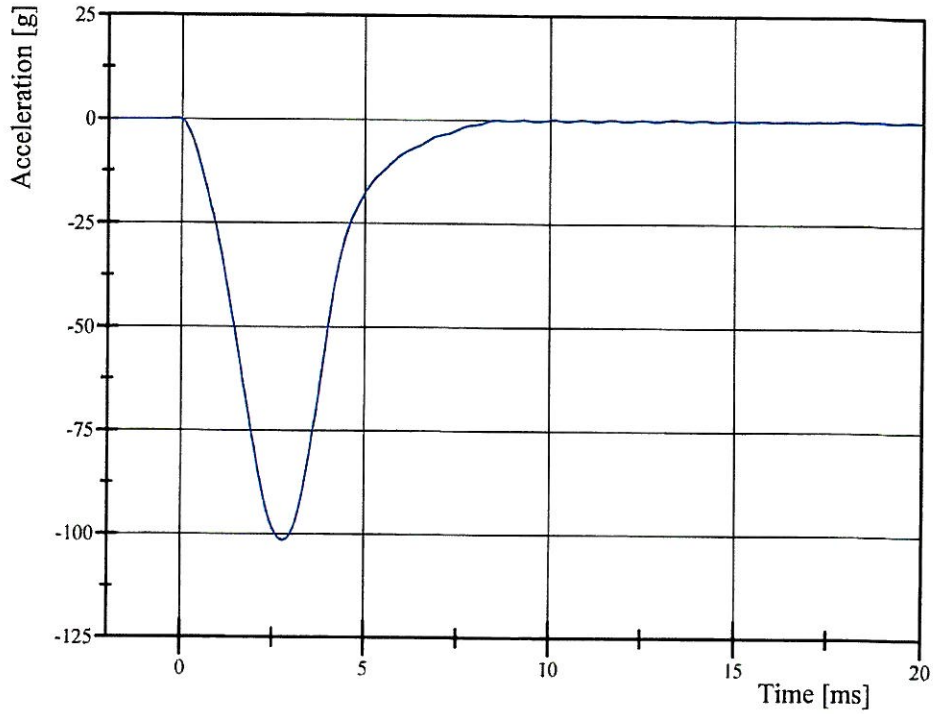
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 11:25:04 1689

Transportation Research Center Inc.

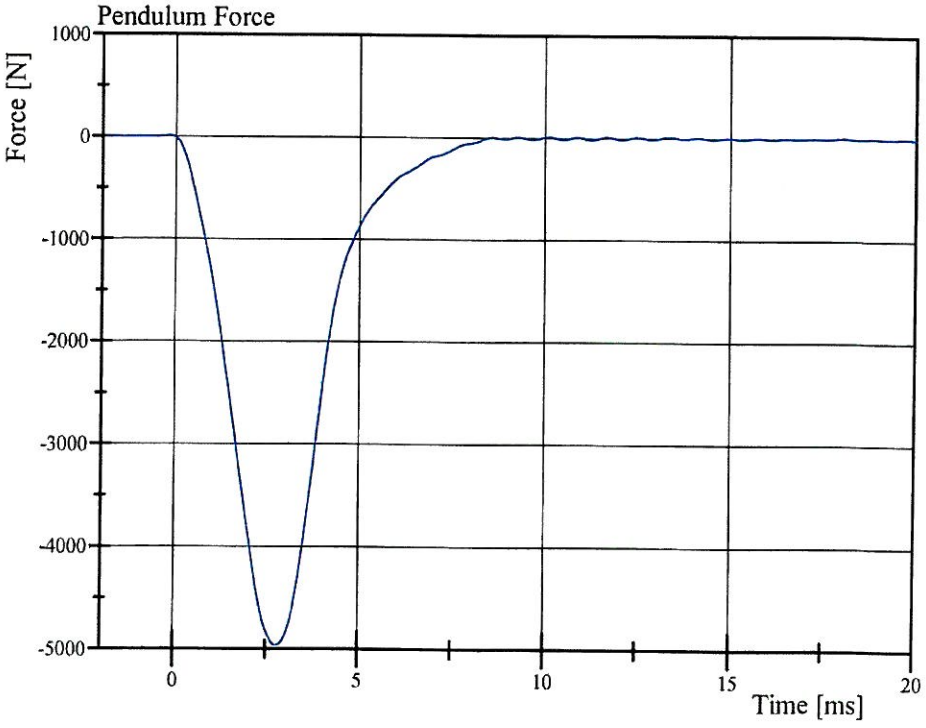
Right Knee Femur Response Test
HIII 50th Serial No. 001 Certification No. 12-1
Test Date: 10/28/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 13.4 ms
Min: -101.4 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 15.9 N at 13.4 ms
Min: -4,962.0 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 11:25:13 1689

091118

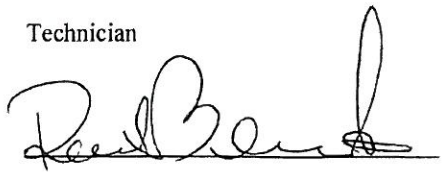
Calibration Test Results

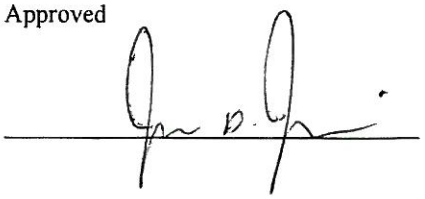
Pre-Test

Right Front Passenger Dummy S/N: 110

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 110 Calibration No. 32

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	885	Yes
B	Shoulder Pivot Height	505.5 - 520.7	513	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	293	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	337	Yes
J	Elbow Rest Height	190.5 - 210.8	202	Yes
K	Buttock Knee Length	579.1 - 604.5	598	Yes
L	Popliteal Height	429.3 - 454.7	443	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	473	Yes
O	Chest Depth	213.4 - 228.6	225	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	431	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	997	Yes
Z	Waist Circumference	835.7 - 866.1	863	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Technician 

Approved 

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	245.0 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-1.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician John K. Chmielewski

Approved

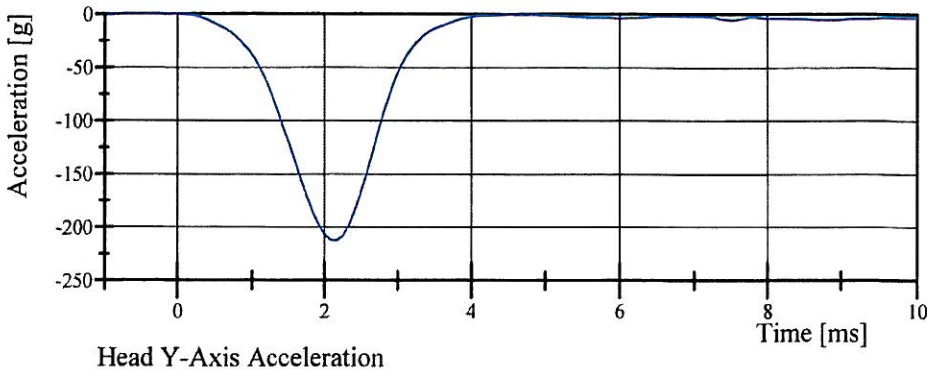
Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.28.2009 14:06:32 612

Transportation Research Center Inc.

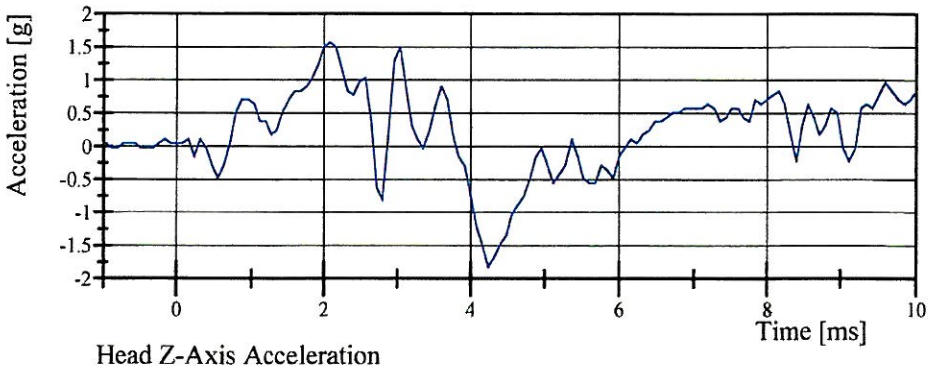
Front Head Drop
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/28/2009

Head X-Axis Acceleration



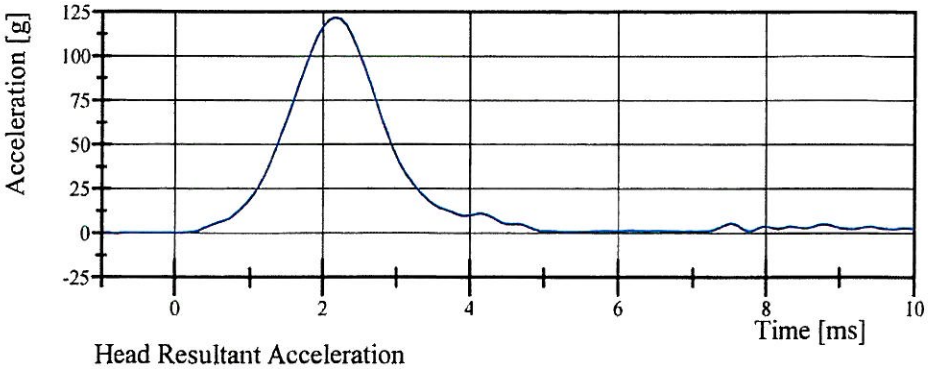
Filter Class: CFC_1000
Max: 0.0 g at -0.8 ms
Min: -212.5 g at 2.2 ms

Head Y-Axis Acceleration



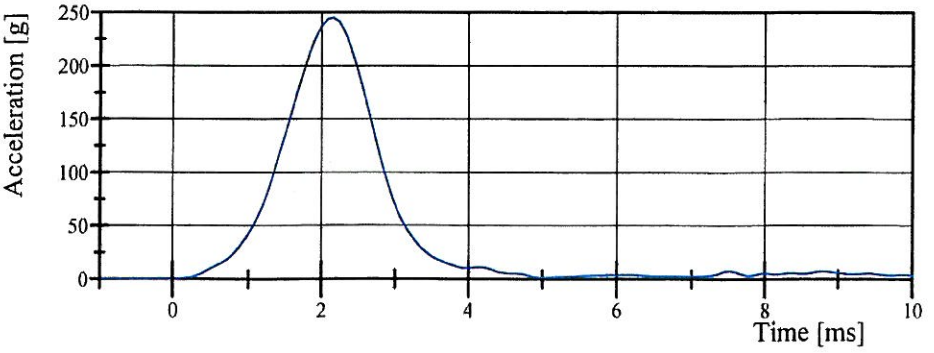
Filter Class: CFC_1000
Max: 1.6 g at 2.1 ms
Min: -1.8 g at 4.2 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 121.9 g at 2.2 ms
Min: -0.2 g at -0.8 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 245.0 g at 2.2 ms
Min: 0.0 g at -0.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 14:06:42 612

Transportation Research Center Inc.

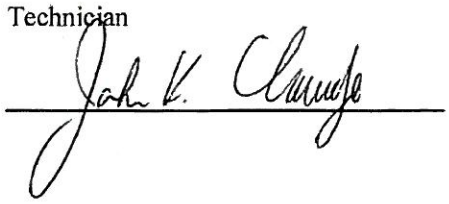
Neck Flexion
HIII 50th Serial No. 110 Certification No. 32-3
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.948 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	37.1 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-25.90 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-22.18 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-17.53 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-17.53 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-73.4 °	Yes
Time of Peak	57 - 64 ms	60.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	122.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	96.5 N·m	Yes
Time of Peak	47 - 58 ms	50.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	101.7 ms	Yes

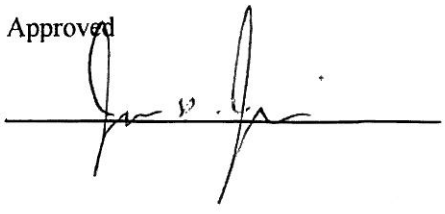
Test meets specifications.

Comments:

Technician



Approved



Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.29.2009 08:16:13 1750

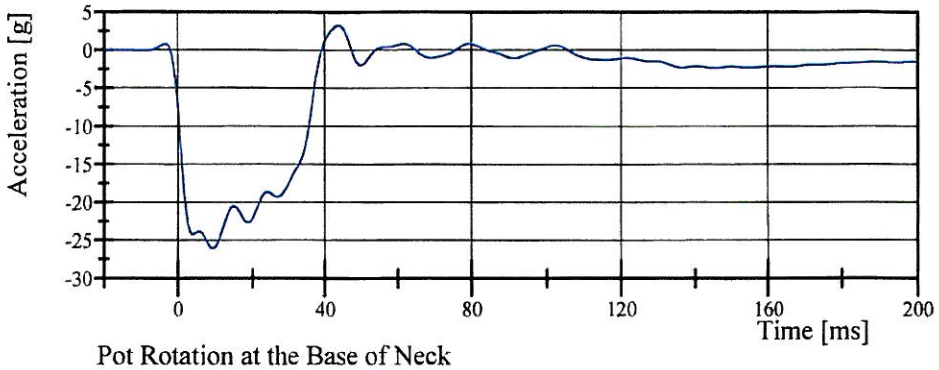
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 110 Certification No. 32-3

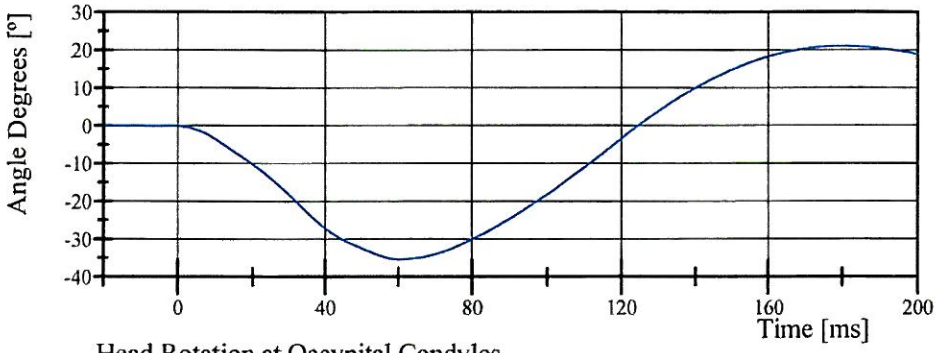
Test Date: 10/29/2009

Pendulum Acceleration



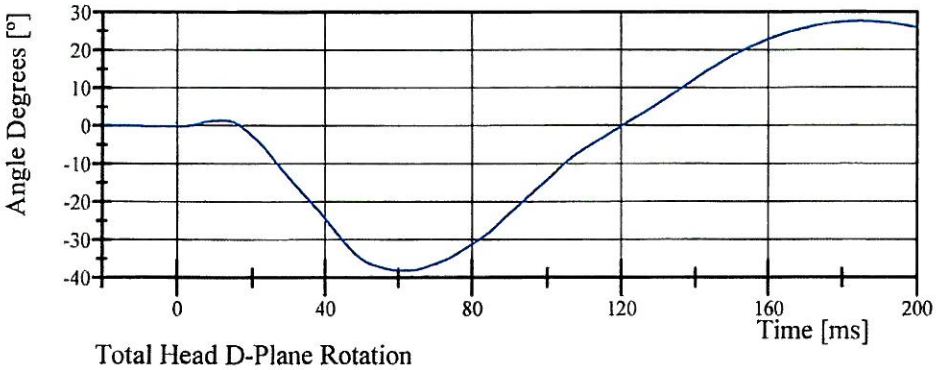
Filter Class: CFC_60
Max: 3.3 g at 43.8 ms
Min: -26.1 g at 9.4 ms

Pot Rotation at the Base of Neck



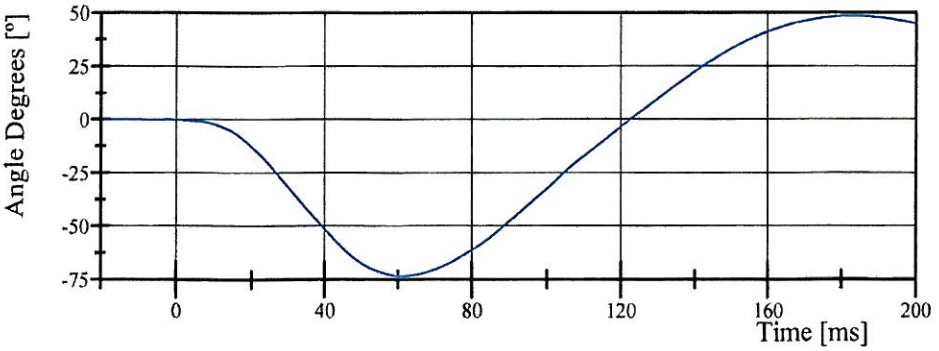
Filter Class: CFC_60
Max: 21.0 ° at 179.8 ms
Min: -35.3 ° at 60.5 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 27.6 ° at 185.0 ms
Min: -38.1 ° at 61.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 48.5 ° at 182.9 ms
Min: -73.4 ° at 60.9 ms

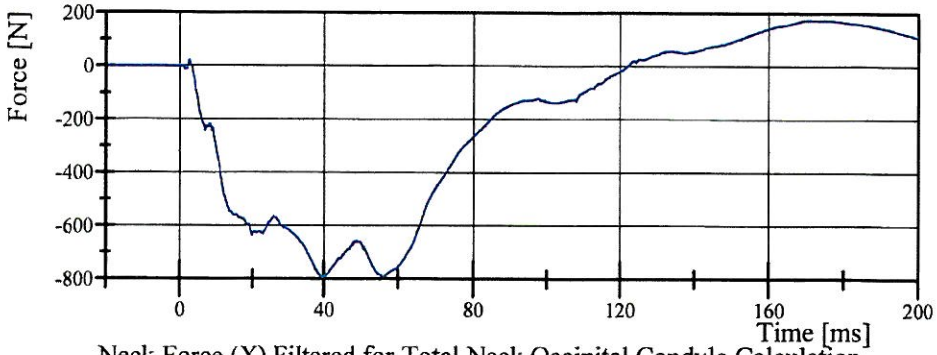
Specification Source. CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:16:20 1750

Transportation Research Center Inc.

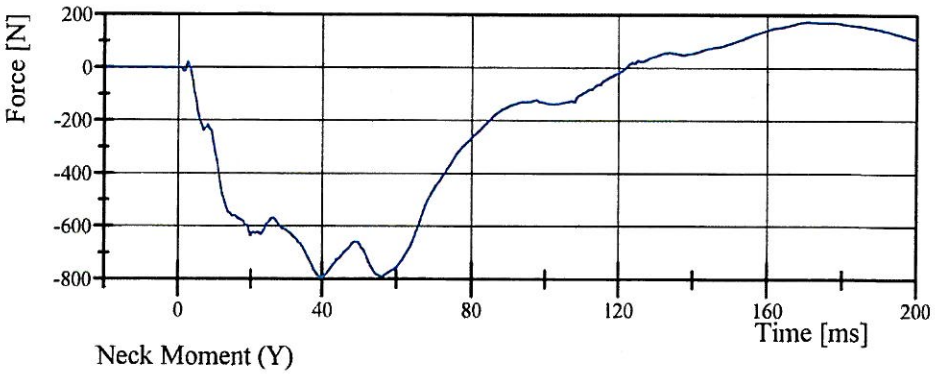
Neck Flexion
HIII 50th Serial No. 110 Certification No. 32-3
Test Date: 10/29/2009

Neck Force (X)



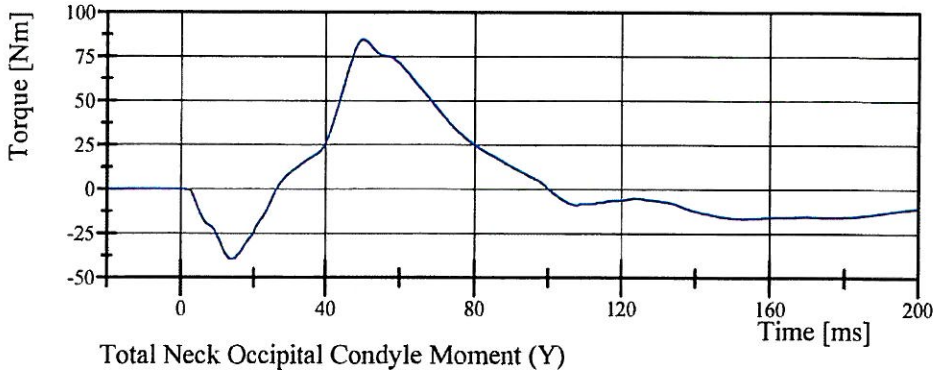
Filter Class: CFC_1000
Max: 176.8 N at 171.0 ms
Min: -793.3 N at 39.6 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



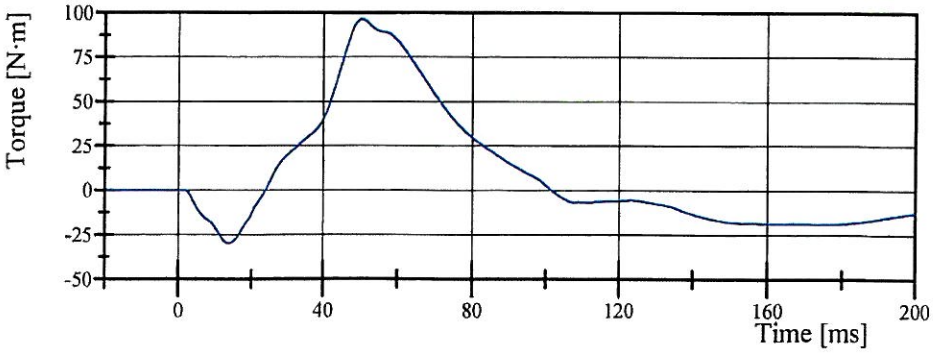
Filter Class: CFC_600
Max: 176.2 N at 171.1 ms
Min: -792.8 N at 39.7 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 84.7 Nm at 50.2 ms
Min: -39.6 Nm at 13.8 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 96.5 N·m at 50.3 ms
Min: -30.0 N·m at 13.7 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:16:21 1750

Transportation Research Center Inc.

Neck Extension
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.980 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	41.7 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.05 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.11 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.13 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.13 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	91.1 °	Yes
Time of Peak	72 - 82 ms	78.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	158.2 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-66.8 N·m	Yes
Time of Peak	65 - 79 ms	72.4 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	144.5 ms	Yes

Test meets specifications.

Comments:

Technician John K. Chandler

Approved

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.29.2009 09:25:53 1881

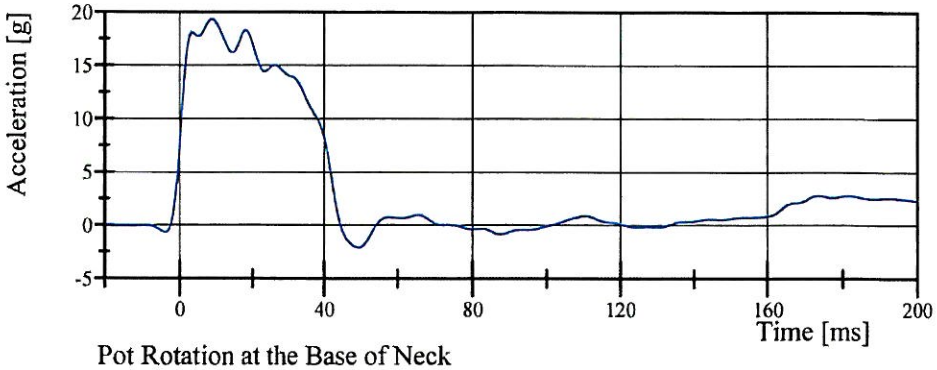
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 110 Certification No. 32-1

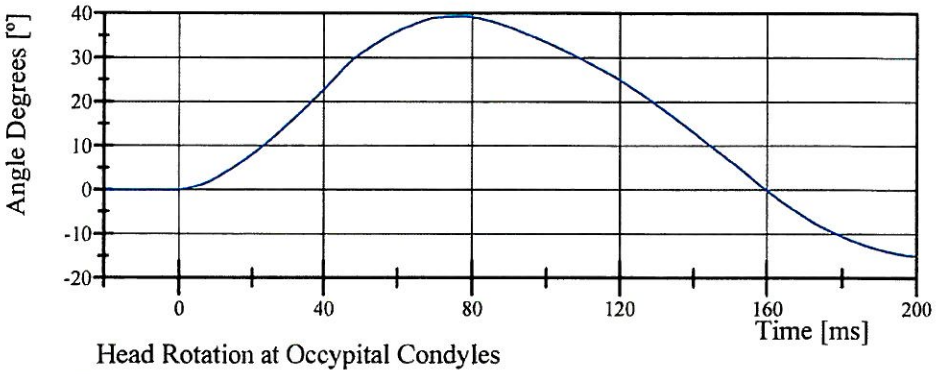
Test Date: 10/29/2009

Pendulum Acceleration



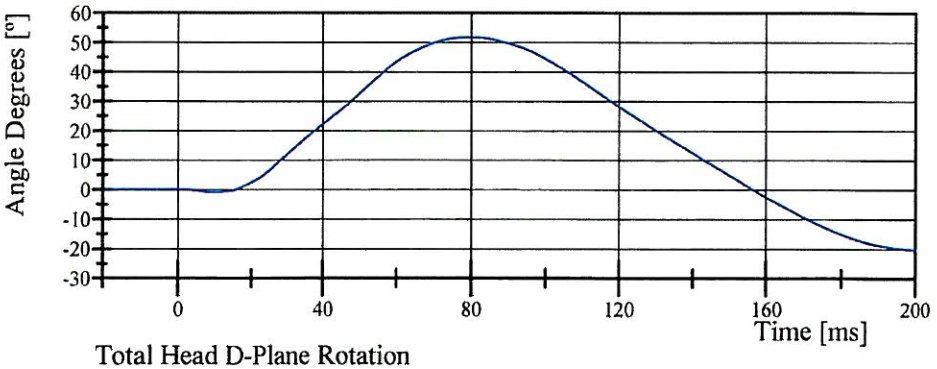
Filter Class: CFC_60
Max: 19.4 g at 8.8 ms
Min: -2.1 g at 49.4 ms

Pot Rotation at the Base of Neck



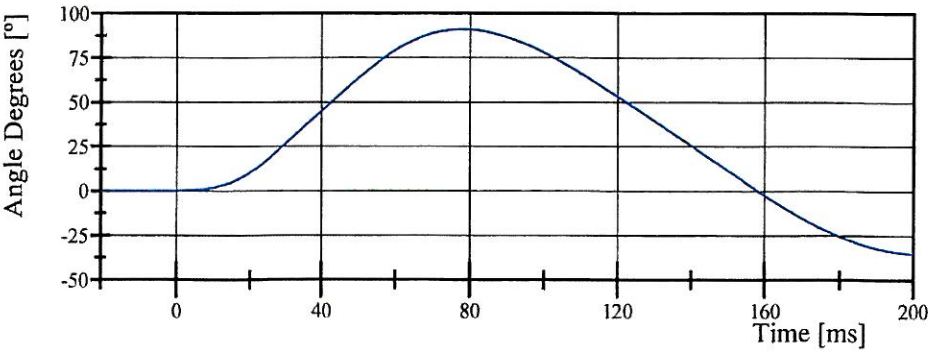
Filter Class: CFC_60
Max: 39.4 ° at 77.2 ms
Min: -14.9 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 51.8 ° at 80.0 ms
Min: -20.2 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 91.1 ° at 78.4 ms
Min: -35.1 ° at 200.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 09:26:02 1881

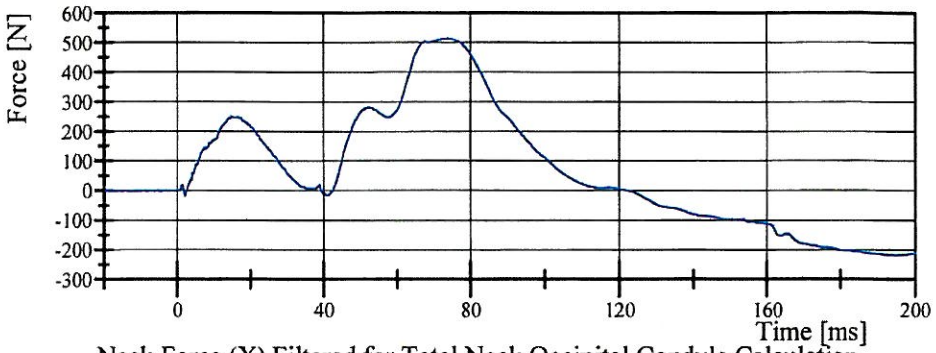
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 110 Certification No. 32-1

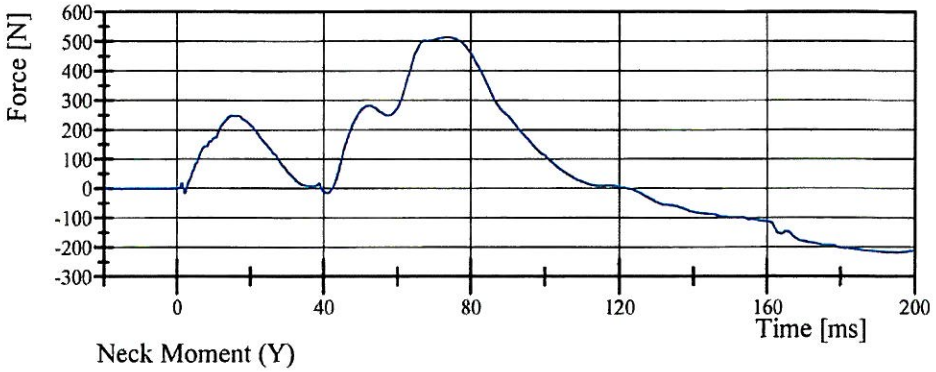
Test Date: 10/29/2009

Neck Force (X)



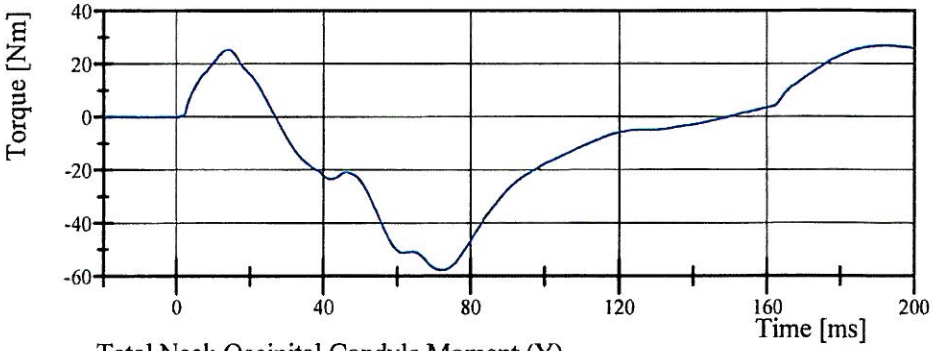
Filter Class: CFC_1000
Max: 515.6 N at 73.8 ms
Min: -219.0 N at 194.6 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



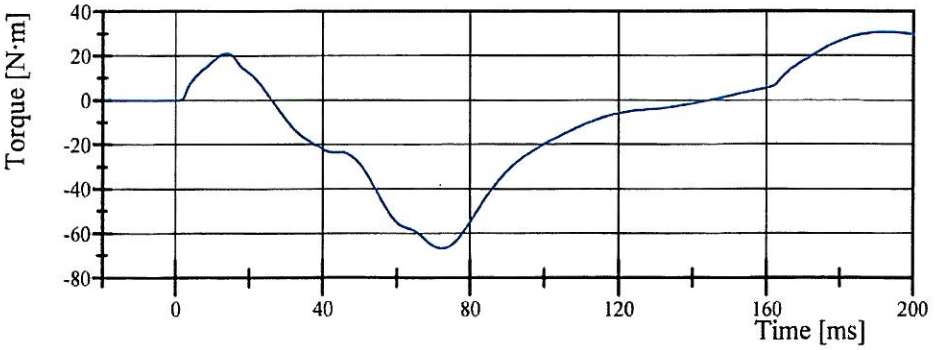
Filter Class: CFC_600
Max: 515.1 N at 73.9 ms
Min: -218.4 N at 194.6 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 26.9 Nm at 192.2 ms
Min: -57.7 Nm at 72.3 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 30.7 N·m at 192.3 ms
Min: -66.8 N·m at 72.4 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 09:26:03 1881

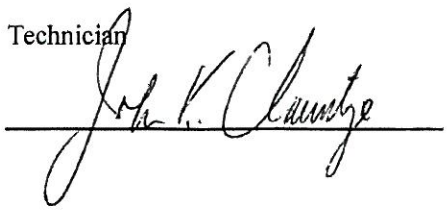
Transportation Research Center Inc.

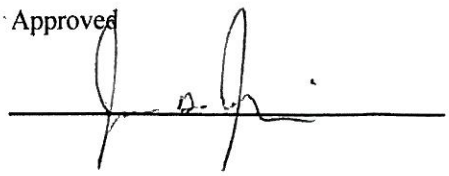
Front Thorax
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.642 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,609.3 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-71.69 mm	Yes
Internal Hysteresis	65 - 85 %	71.1 %	Yes

Test meets specifications.

Comments:

Technician 

Approved 

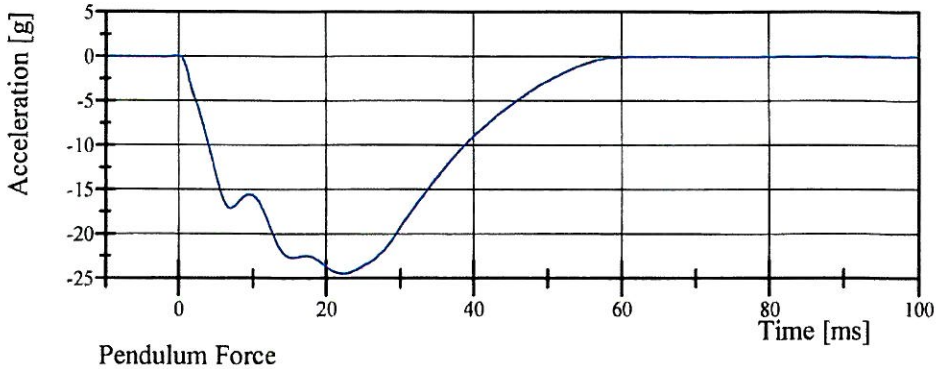
Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.29.2009 11:32:31 1544

Transportation Research Center Inc.

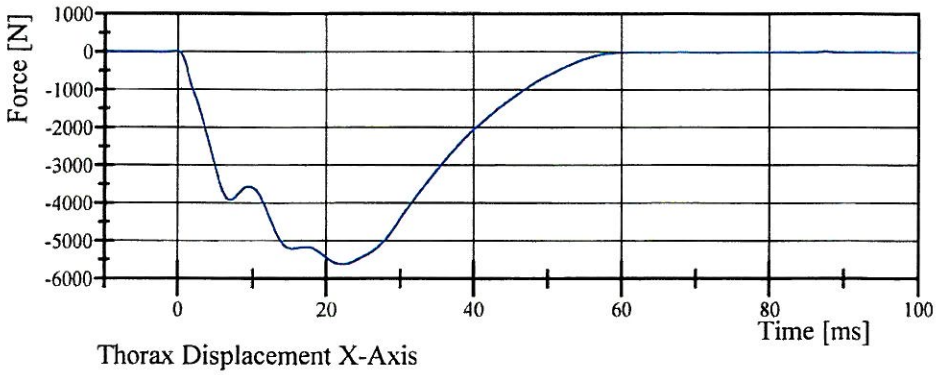
Front Thorax
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/29/2009

Pendulum Acceleration



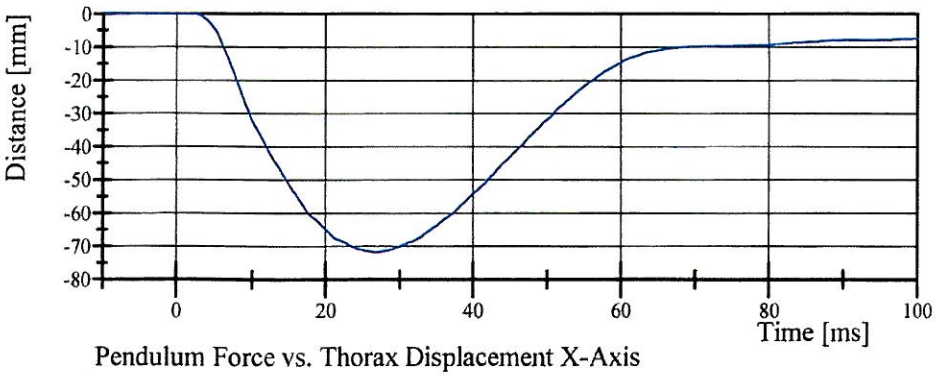
Filter Class: CFC_180
Max: 0.1 g at -0.2 ms
Min: -24.5 g at 22.3 ms

Pendulum Force



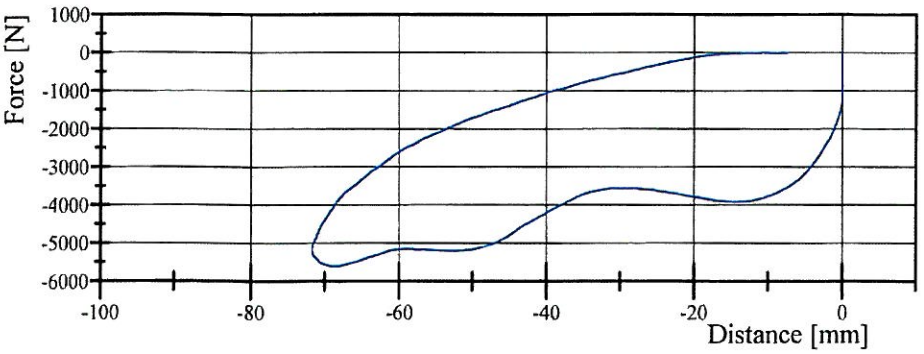
Filter Class: CFC_180
Max: 25.2 N at -0.2 ms
Min: -5,609.3 N at 22.3 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -9.0 ms
Min: -71.7 mm at 26.8 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 25.2 N at 0.0 mm
Min: -5,609.3 N at -68.6 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.29.2009 11:32:39 1544

Transportation Research Center Inc

Hybrid III Hip Range of Motion

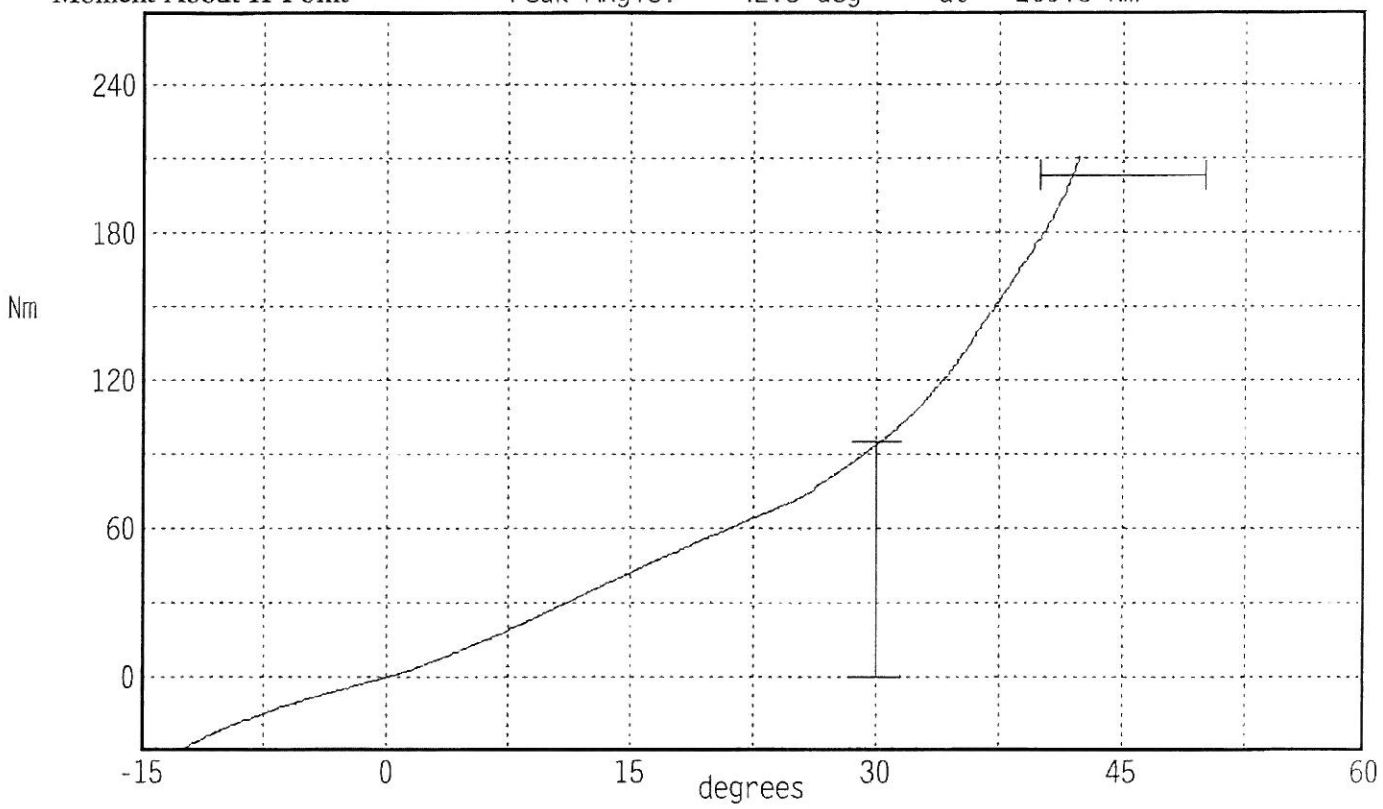
Serial Number: 110L
Test Number: 110C32
Comments:

Date: 10/28/2009
Time: 15:53

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.8 °C	Pass
Humidity	10 - 70	45 %	Pass
Moment at 30 deg	<= 94.9	94.1 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.0 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

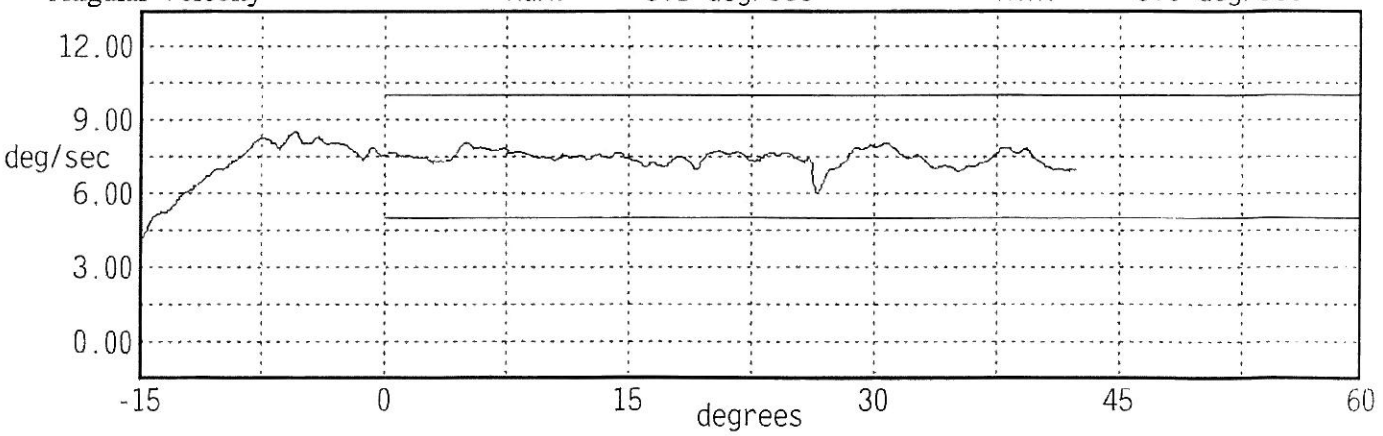
Moment About H-Point

Peak Moment: 210.5 Nm at 42.3 deg
Peak Angle: 42.3 deg at 209.3 Nm



Angular Velocity

Max: 8.1 deg/sec Min: 6.0 deg/sec



Transportation Research Center Inc

Hybrid III Hip Range of Motion

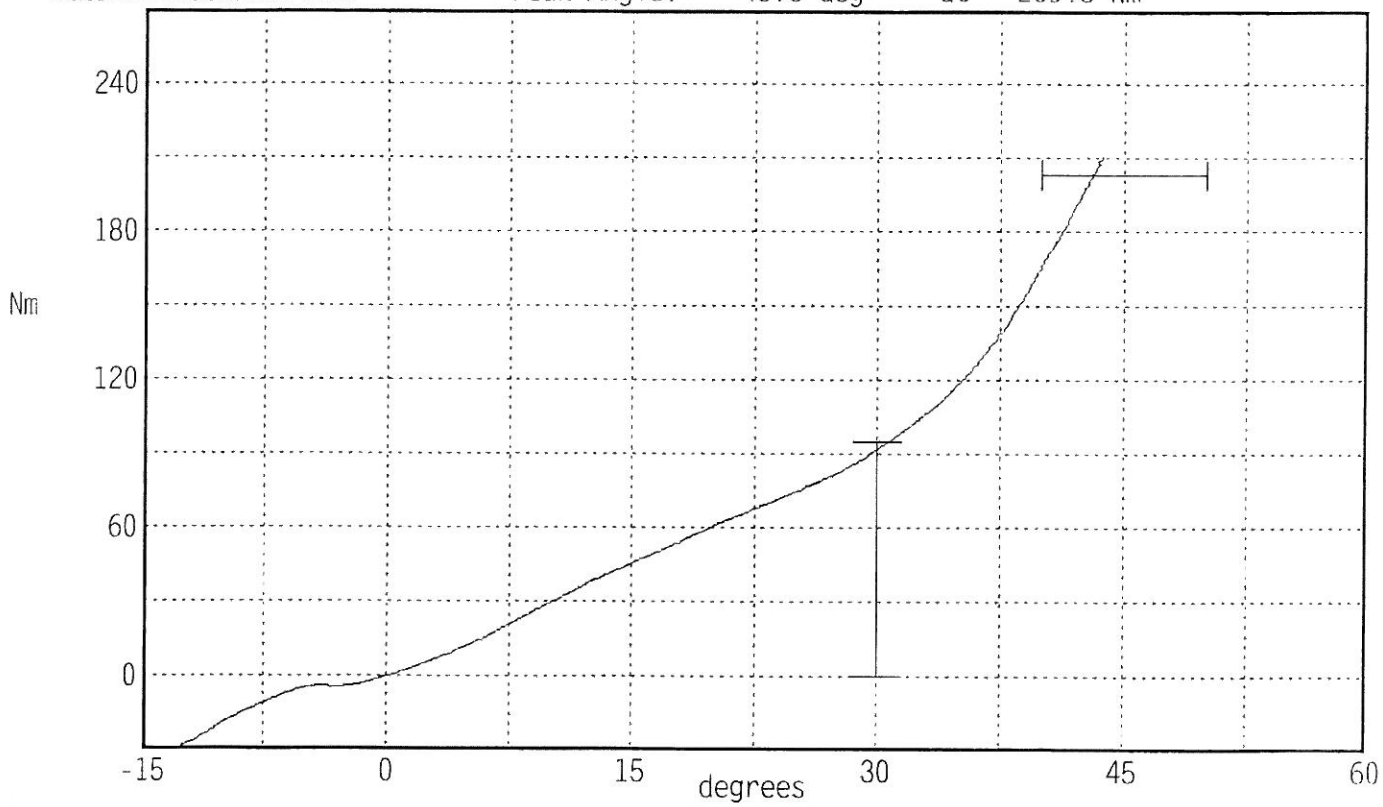
Serial Number: 110R
Test Number: 110C32
Comments:

Date: 10/28/2009
Time: 16:01

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.8 °C	Pass
Humidity	10 - 70	45 %	Pass
Moment at 30 deg	<= 94.9	92.0 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	43.1 deg	Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec	Pass

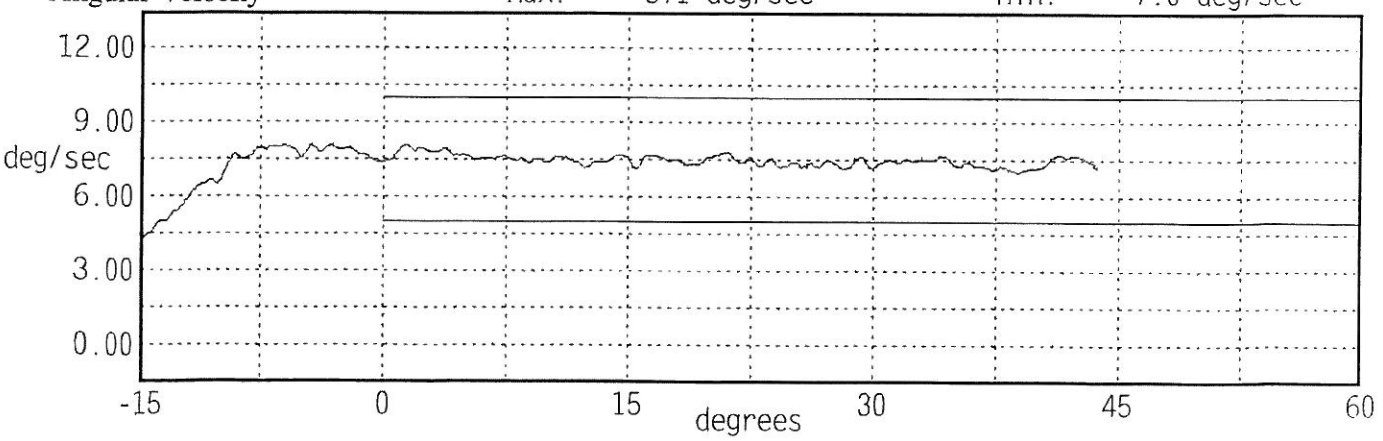
Moment About H-Point

Peak Moment: 210.5 Nm at 43.6 deg
Peak Angle: 43.6 deg at 209.5 Nm



Angular Velocity

Max: 8.1 deg/sec Min: 7.0 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.095 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,199.84 N	Yes

Test meets specifications.

Comments:

Technician

Approved

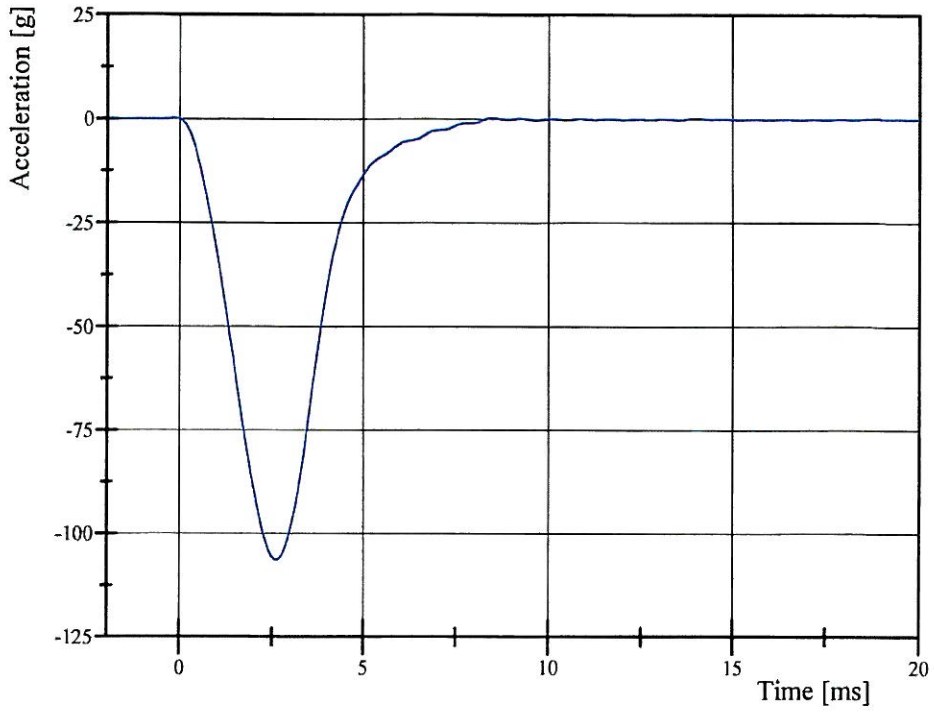
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 13:49:43 1698

Transportation Research Center Inc.

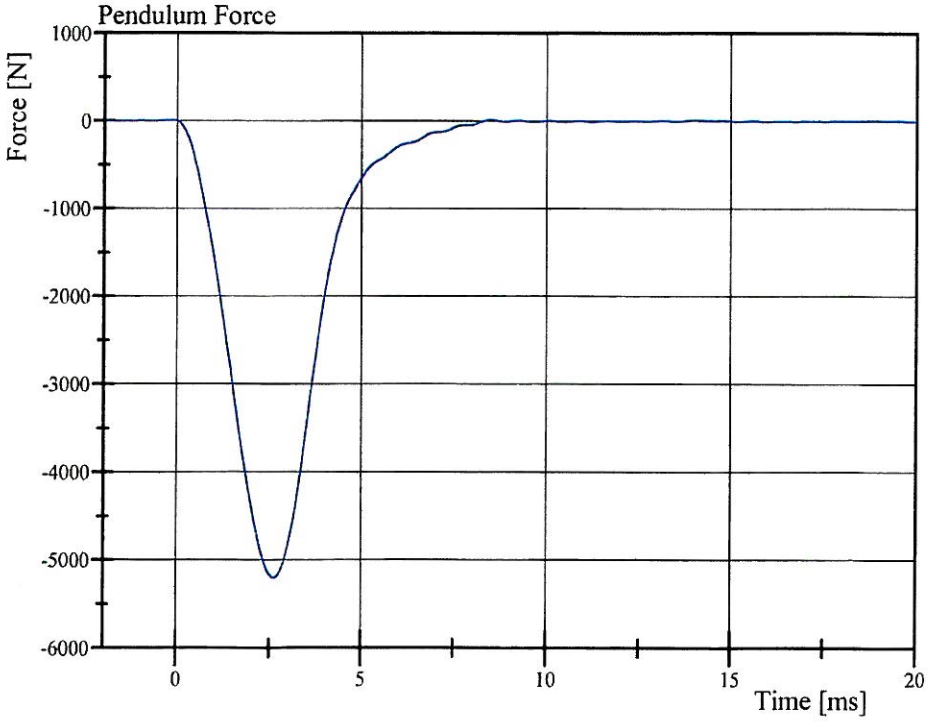
Left Knee Femur Response Test
HIII 50th Serial No. 110 Certification No. 32-1
Test Date: 10/28/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 8.5 ms
Min: -106.3 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 16.3 N at 8.5 ms
Min: -5,199.8 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 13:49:51 1698

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 110 Certification No. 32-3
Test Date: 10/28/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.100 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,606.17 N	Yes

Test meets specifications.

Comments:

Technician

Approved

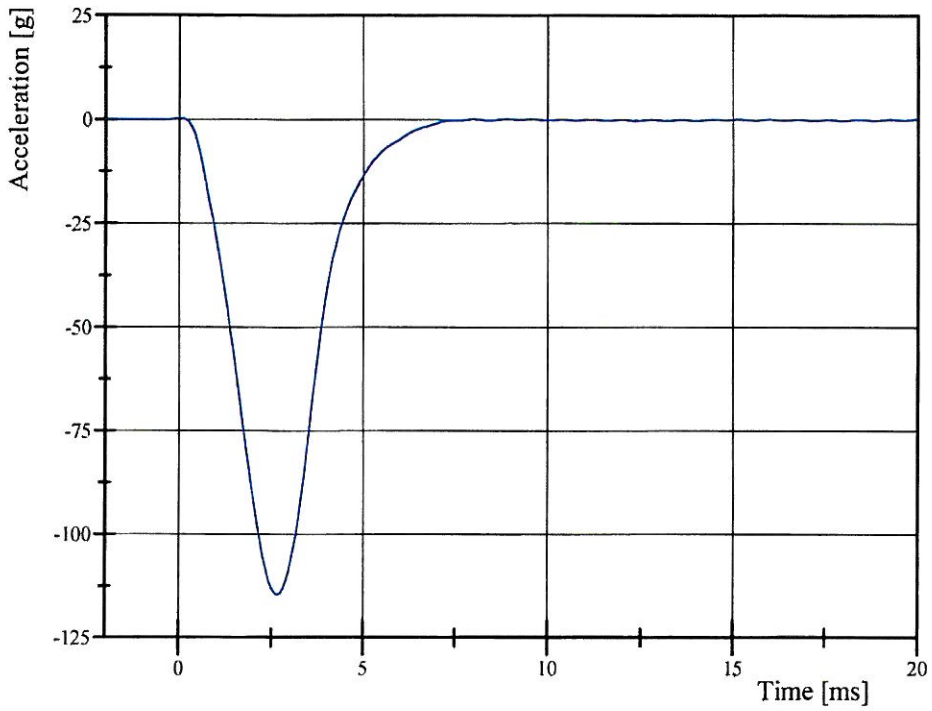
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 15:03:23 1818

Transportation Research Center Inc.

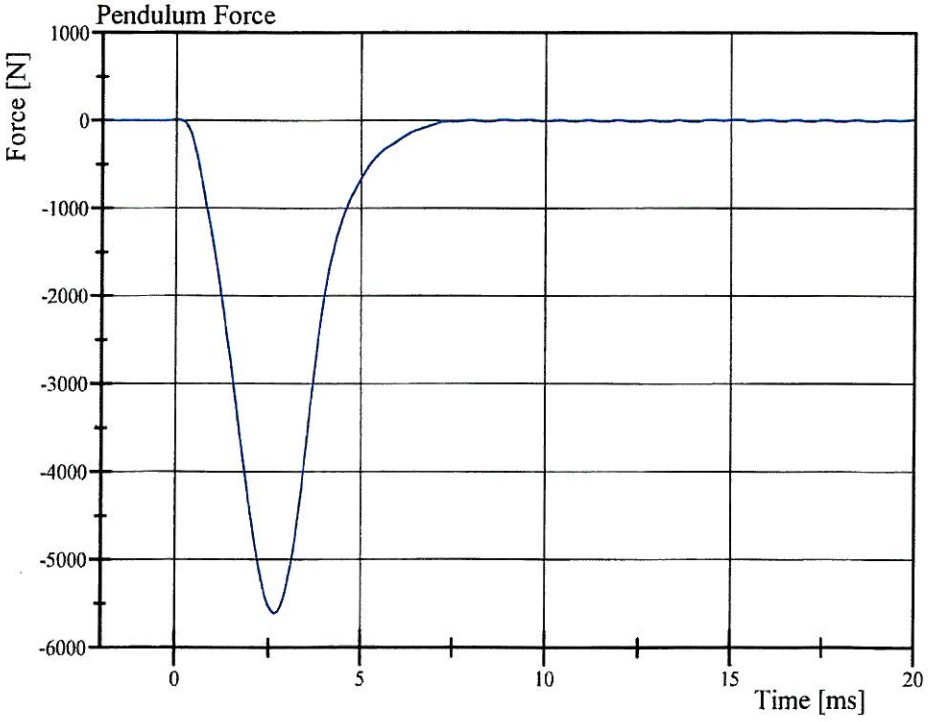
Right Knee Femur Response Test
HIII 50th Serial No. 110 Certification No. 32-3
Test Date: 10/28/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 0.0 ms
Min: -114.6 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600
Max: 15.2 N at 0.0 ms
Min: -5,606.2 N at 2.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.28.2009 15:03:38 1818

Calibration Test Results

Pre-Test

Left Rear Passenger Dummy S/N: 043

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 043
Calibration No. 08

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	884	Yes
B	Shoulder Pivot Height	505.5 - 520.7	518	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	89	Yes
F	Thigh Clearance	139.7 - 154.9	153	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	294	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	333	Yes
J	Elbow Rest Height	190.5 - 210.8	205	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	438	Yes
M	Knee Pivot Height	485.1 - 500.4	495	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	222	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	430	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	988	Yes
Z	Waist Circumference	835.7 - 866.1	861	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comments:

Technician

Approved

Revised 3/13/3003

091118

Transportation Research Center Inc.

Front Head Drop
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	256.5 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	5.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Approved

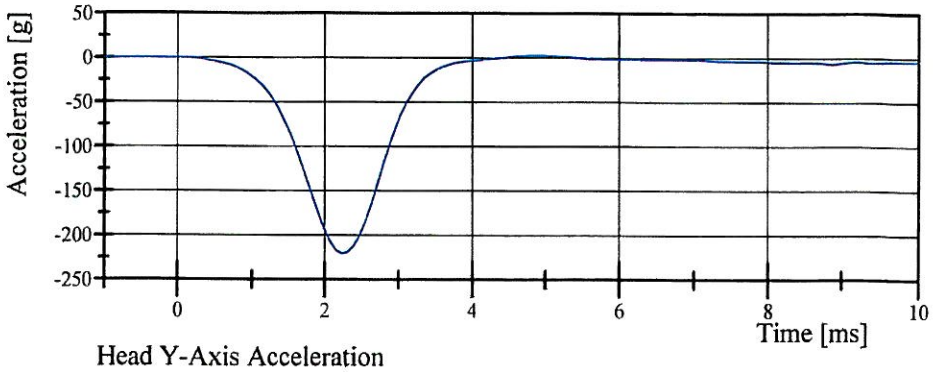
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 07:59:32 610

Transportation Research Center Inc.

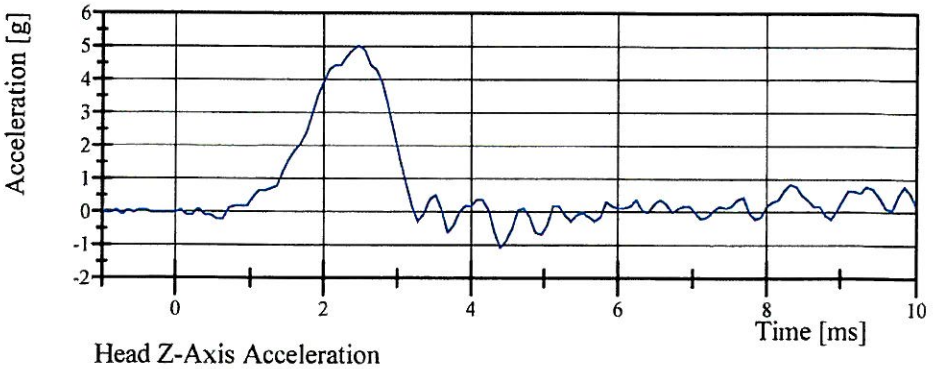
Front Head Drop
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Head X-Axis Acceleration



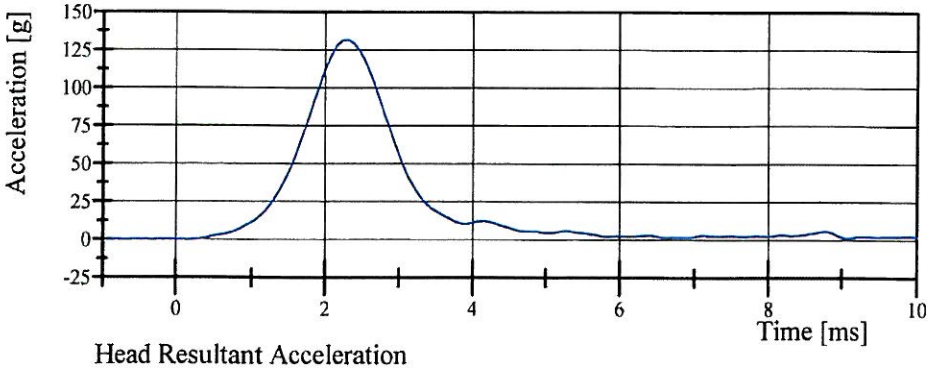
Filter Class: CFC_1000
Max: 3.1 g at 4.8 ms
Min: -220.3 g at 2.2 ms

Head Y-Axis Acceleration



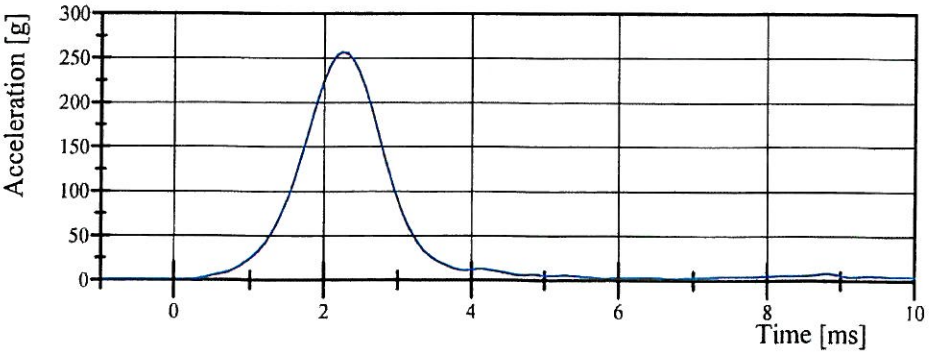
Filter Class: CFC_1000
Max: 5.0 g at 2.5 ms
Min: -1.1 g at 4.4 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 132.0 g at 2.3 ms
Min: -0.1 g at -1.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 256.5 g at 2.2 ms
Min: 0.0 g at -1.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 07:59:38 610

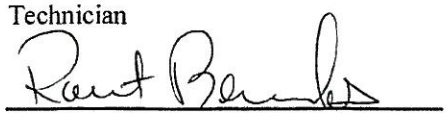
Transportation Research Center Inc.

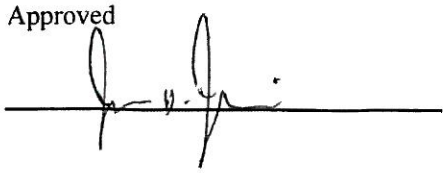
Neck Flexion
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.949 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	38.6 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-25.87 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-22.44 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.85 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.85 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-68.3 °	Yes
Time of Peak	57 - 64 ms	60.4 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	121.1 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	97.3 N·m	Yes
Time of Peak	47 - 58 ms	51.3 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	98.2 ms	Yes

Test meets specifications.

Comments:

Technician 

Approved 

Specification Source: CFR49 Part 572 Subpart E with Polarity in accordance with J211

10.29.2009 09:59:39 2964

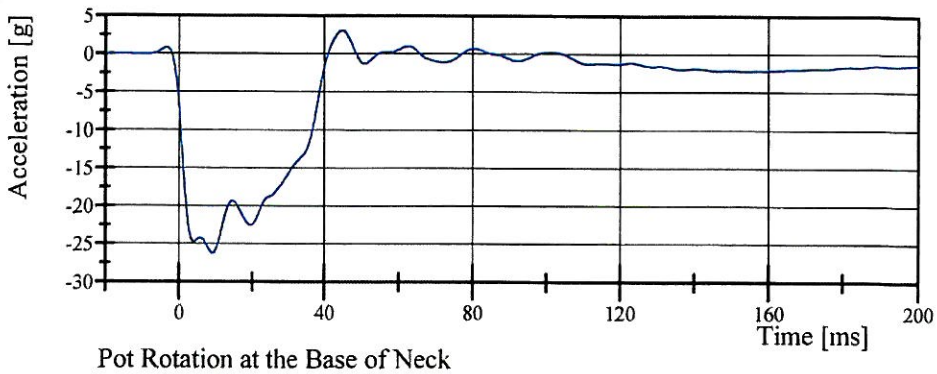
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 043 Certification No. 8-1

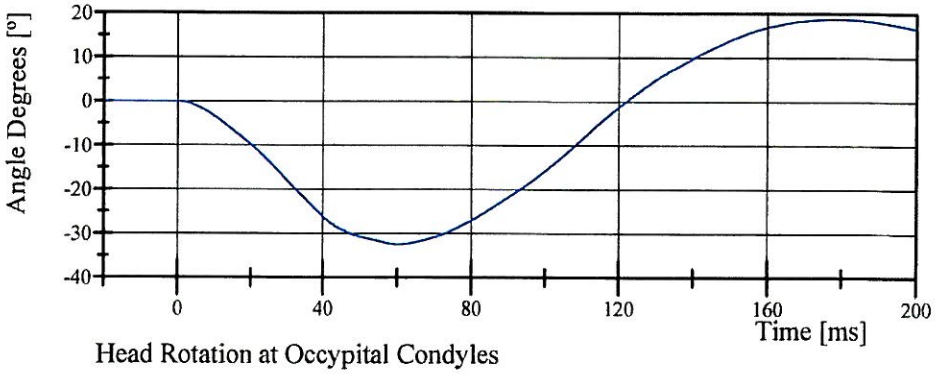
Test Date: 10/29/2009

Pendulum Acceleration



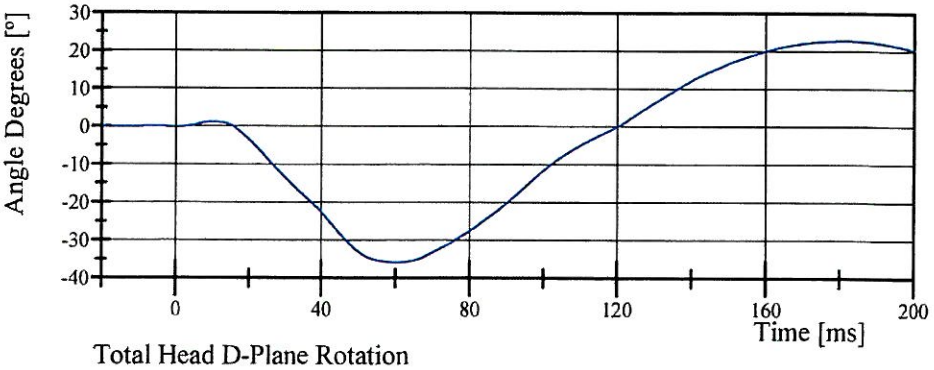
Filter Class: CFC_60
Max: 3.1 g at 44.9 ms
Min: -26.2 g at 9.3 ms

Pot Rotation at the Base of Neck



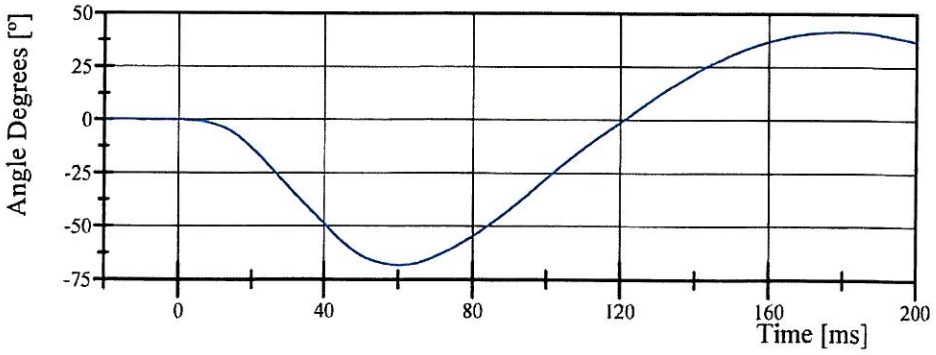
Filter Class: CFC_60
Max: 18.9 ° at 178.3 ms
Min: -32.4 ° at 60.4 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 22.8 ° at 181.4 ms
Min: -35.8 ° at 60.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 41.7 ° at 179.5 ms
Min: -68.3 ° at 60.4 ms

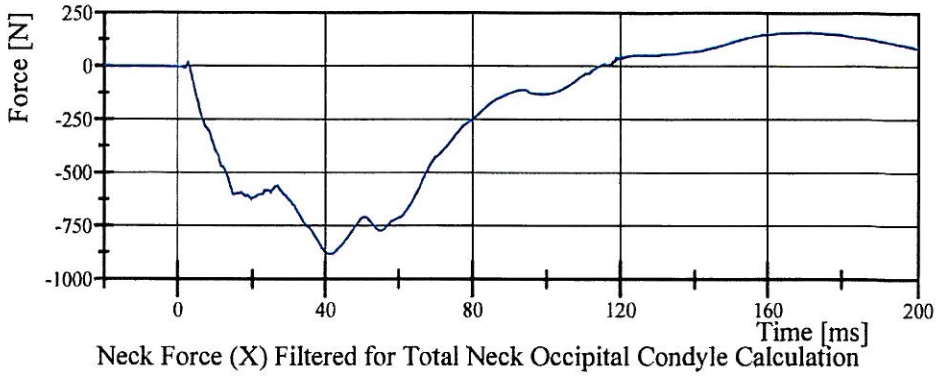
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 09:59:45 2964

Transportation Research Center Inc.

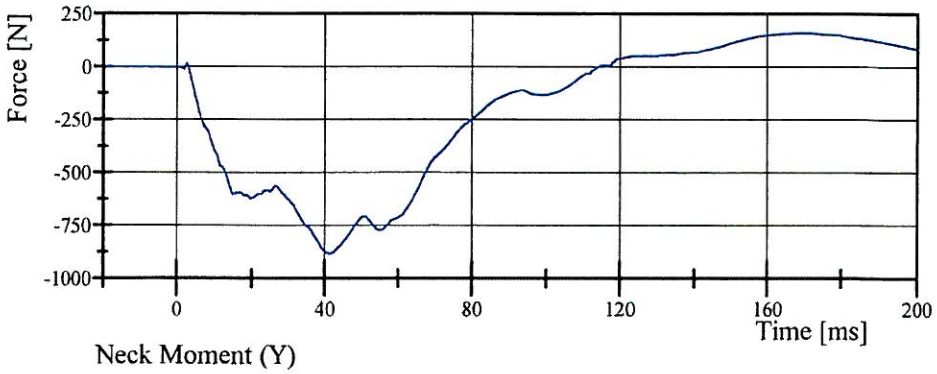
Neck Flexion
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Neck Force (X)



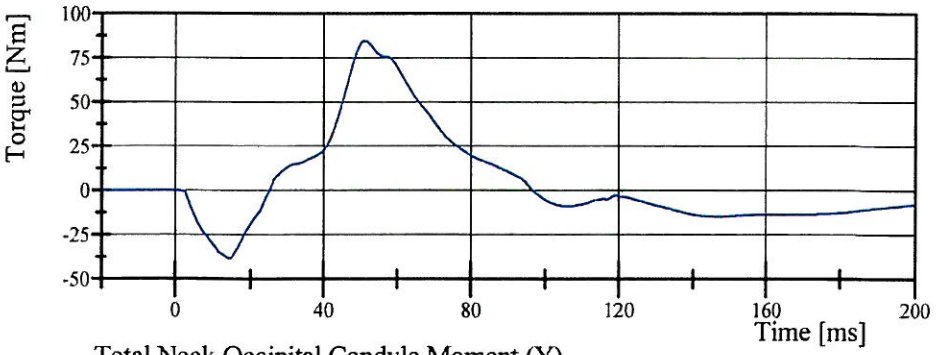
Filter Class: CFC_1000
Max: 162.4 N at 170.1 ms
Min: -881.4 N at 41.0 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



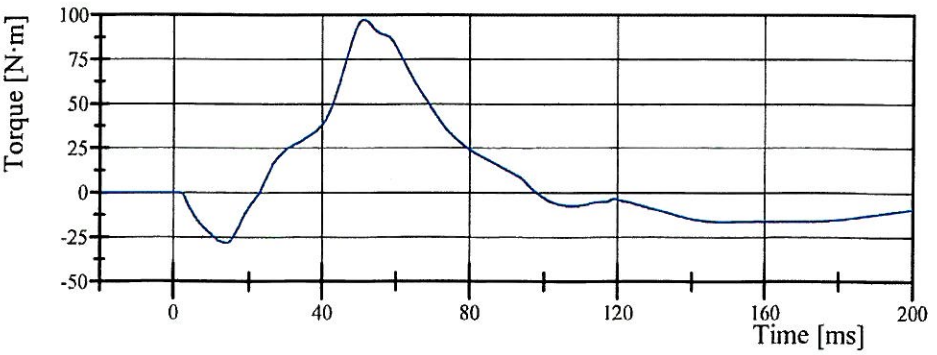
Filter Class: CFC_600
Max: 162.2 N at 170.2 ms
Min: -881.2 N at 41.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 84.8 Nm at 51.2 ms
Min: -38.4 Nm at 14.6 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 97.3 N·m at 51.3 ms
Min: -28.3 N·m at 14.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 09:59:46 2964

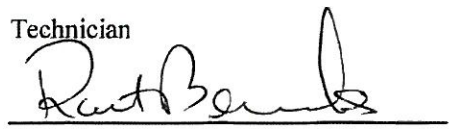
Transportation Research Center Inc.

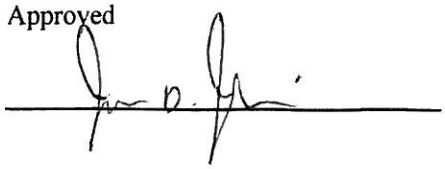
Neck Extension
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.979 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	43.1 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.35 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	16.43 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.11 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.11 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	92.1 °	Yes
Time of Peak	72 - 82 ms	77.9 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	161.0 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-64.7 N·m	Yes
Time of Peak	65 - 79 ms	73.6 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	145.1 ms	Yes

Test meets specifications.

Comments:

Technician 

Approved 

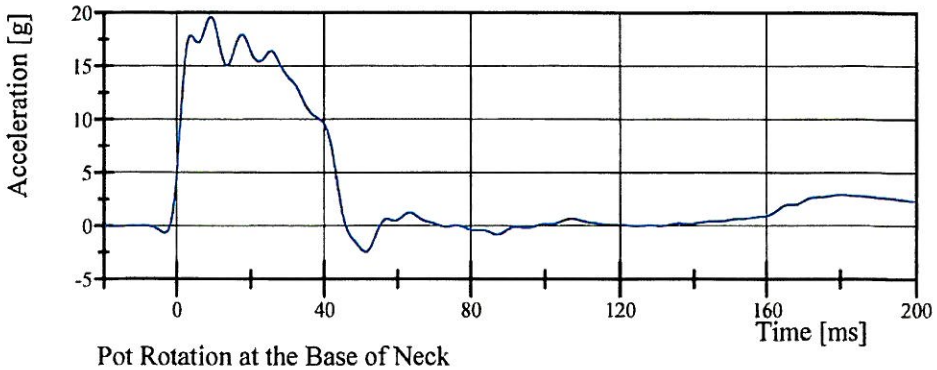
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 10:31:19 3043

Transportation Research Center Inc.

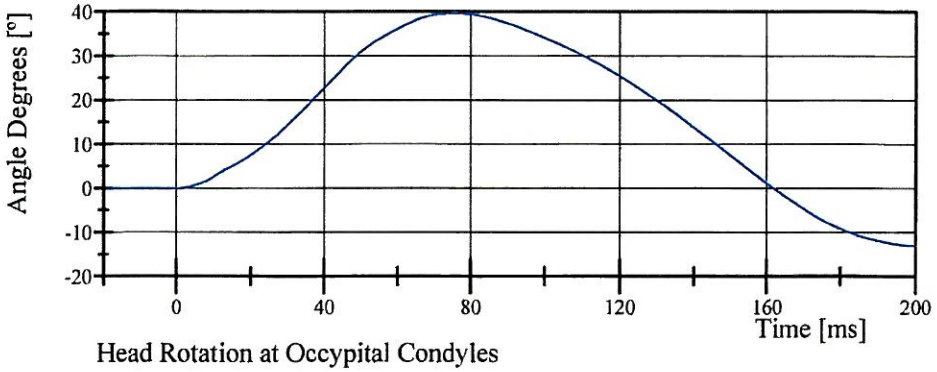
Neck Extension
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Pendulum Acceleration



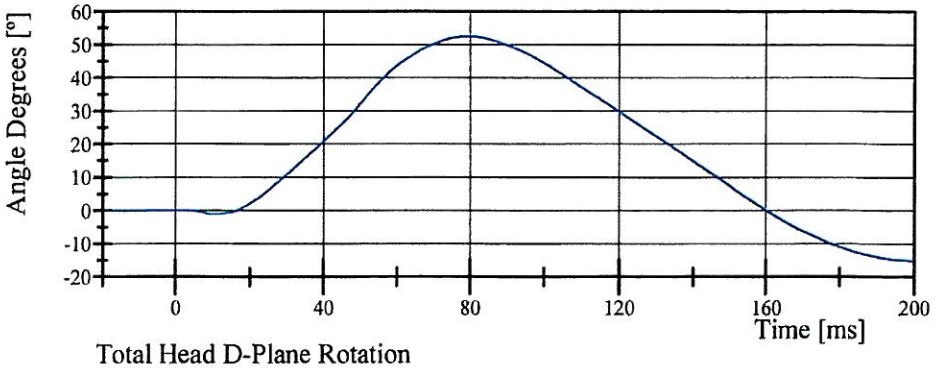
Filter Class: CFC_60
Max: 19.6 g at 9.3 ms
Min: -2.4 g at 51.1 ms

Pot Rotation at the Base of Neck



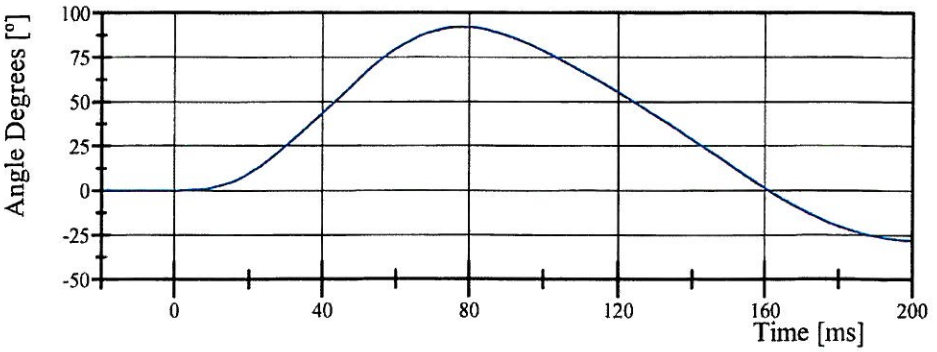
Filter Class: CFC_60
Max: 39.7 ° at 75.7 ms
Min: -13.0 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 52.5 ° at 79.9 ms
Min: -15.2 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 92.1 ° at 77.9 ms
Min: -28.1 ° at 200.0 ms

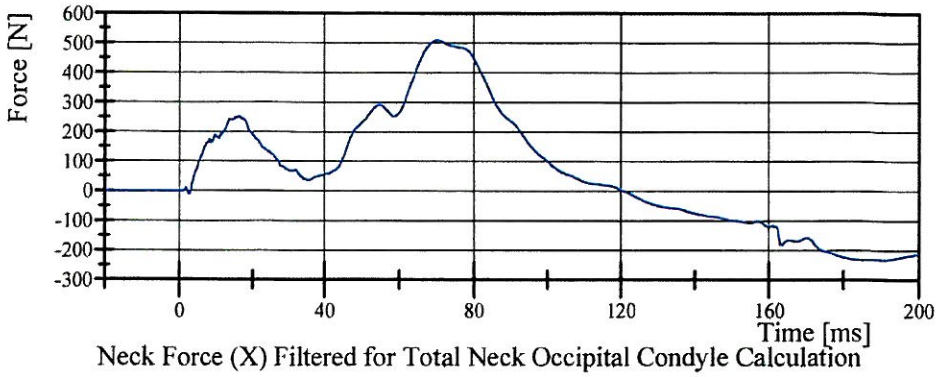
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 10:31:25 3043

Transportation Research Center Inc.

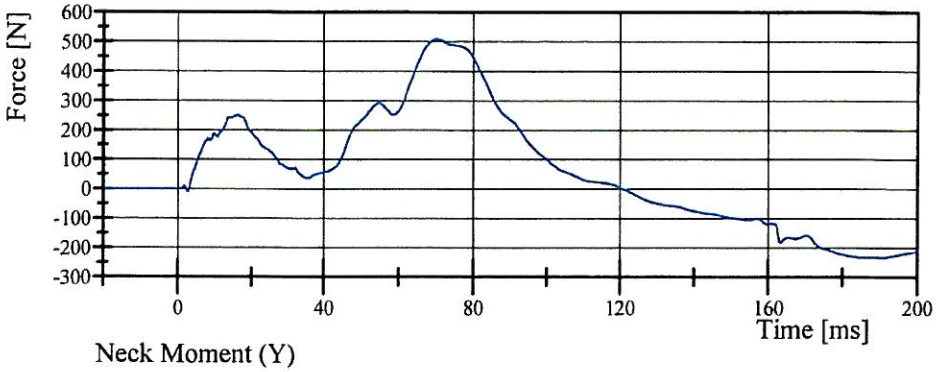
Neck Extension
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Neck Force (X)



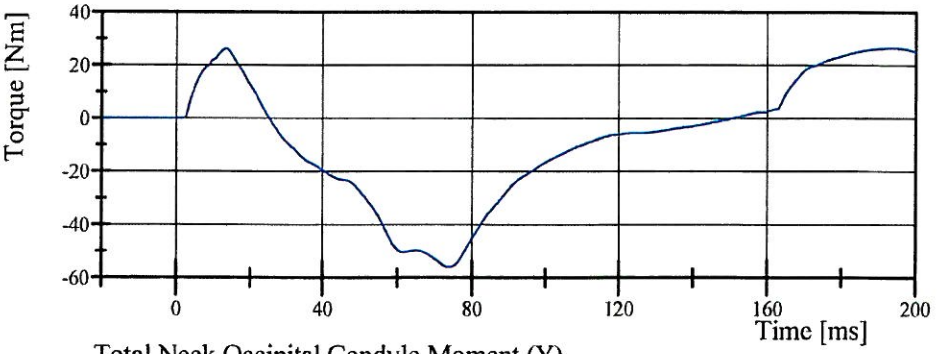
Filter Class: CFC_1000
Max: 510.4 N at 69.9 ms
Min: -233.1 N at 190.2 ms

Neck Force (X) Filtered for Total Neck Occipital Condyle Calculation



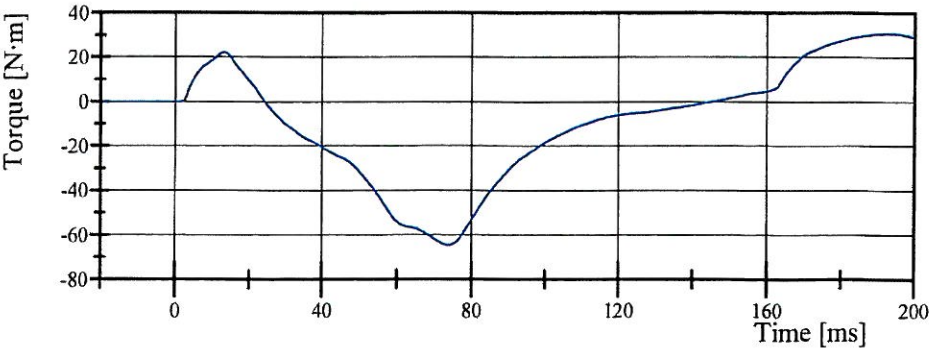
Filter Class: CFC_600
Max: 510.3 N at 70.1 ms
Min: -232.6 N at 190.2 ms

Neck Moment (Y)



Filter Class: CFC_600
Max: 26.6 Nm at 194.1 ms
Min: -56.0 Nm at 73.7 ms

Total Neck Occipital Condyle Moment (Y)



Filter Class: CFC_600
Max: 30.7 N·m at 192.6 ms
Min: -64.7 N·m at 73.6 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 10:31:26 3043

Transportation Research Center Inc.

Front Thorax
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.651 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,518.9 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-71.49 mm	Yes
Internal Hysteresis	65 - 85 %	74.0 %	Yes

Test meets specifications.

Comments:

Technician

Approved

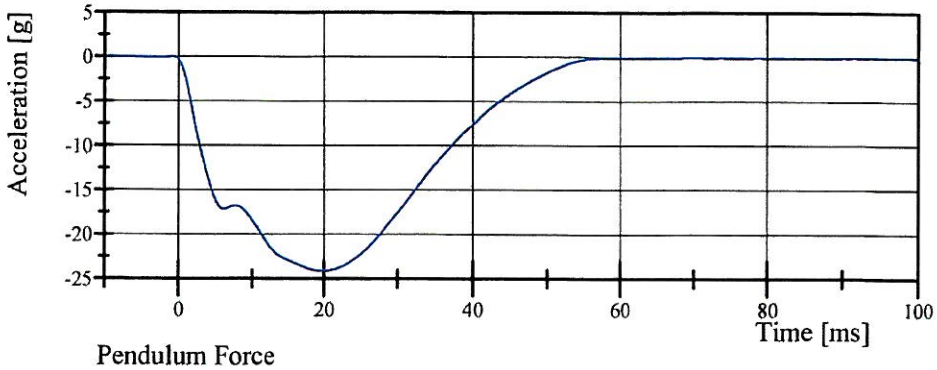
Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.29.2009 11:06:27 381

Transportation Research Center Inc.

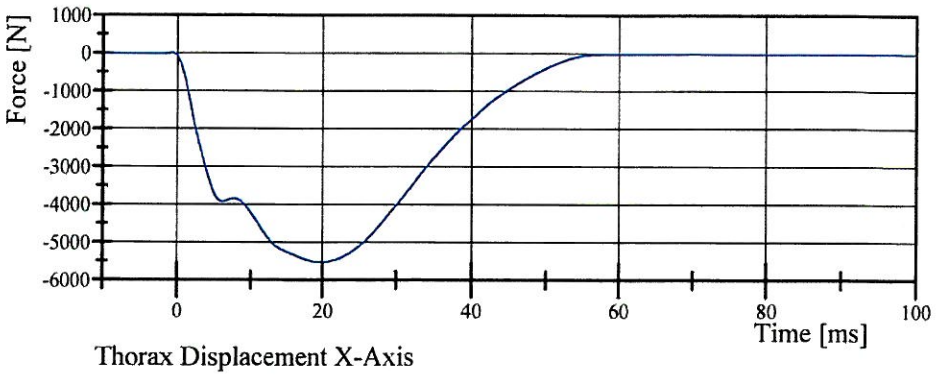
Front Thorax
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Pendulum Acceleration



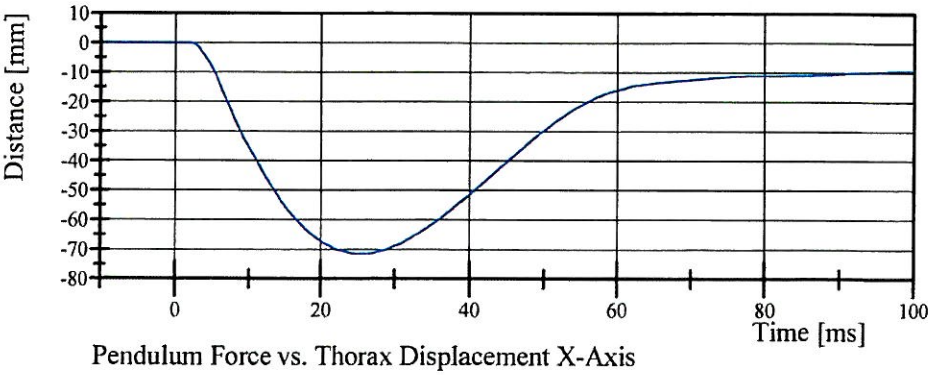
Filter Class: CFC_180
Max: 0.1 g at -0.7 ms
Min: -24.1 g at 19.7 ms

Pendulum Force



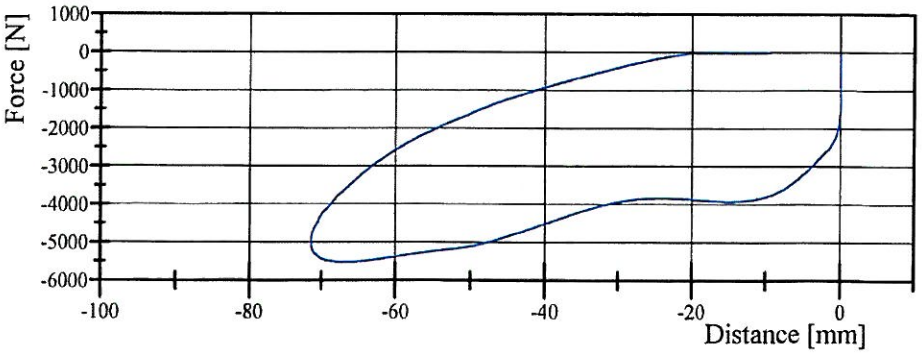
Filter Class: CFC_180
Max: 14.1 N at -0.7 ms
Min: -5,518.9 N at 19.7 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.1 mm at 1.8 ms
Min: -71.5 mm at 25.8 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 14.1 N at 0.0 mm
Min: -5,518.9 N at -66.7 mm

Specification Source: CFR49 Part 572 Subpart P
with Polarity in accordance with J211

10.29.2009 11:06:34 381

Transportation Research Center Inc

Hybrid III Hip Range of Motion

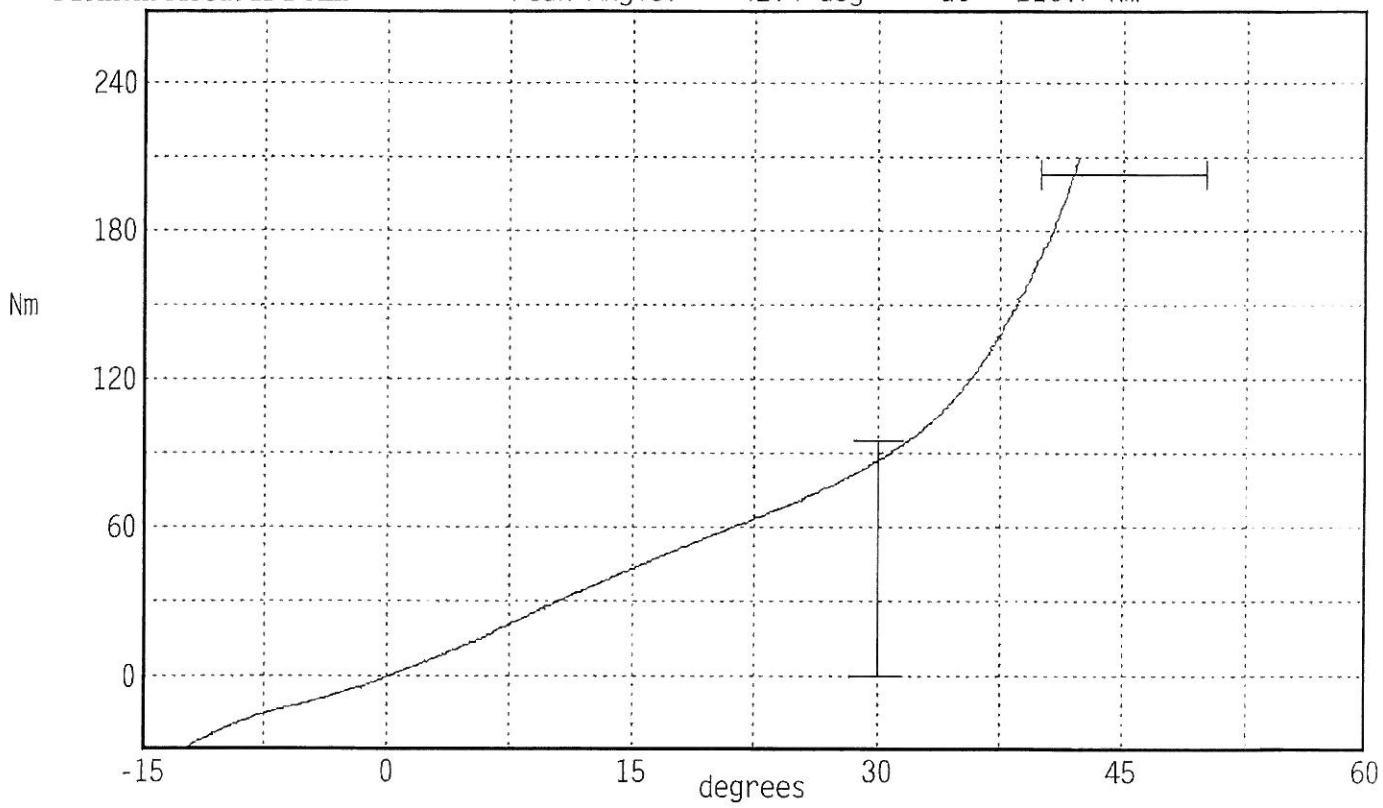
Serial Number: 043L
Test Number: 043C08
Comments:

Date: 10/29/2009
Time: 08:41

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.7	°C	Pass
Humidity	10 - 70	44	%	Pass
Moment at 30 deg	<= 94.9	87.3	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.0	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

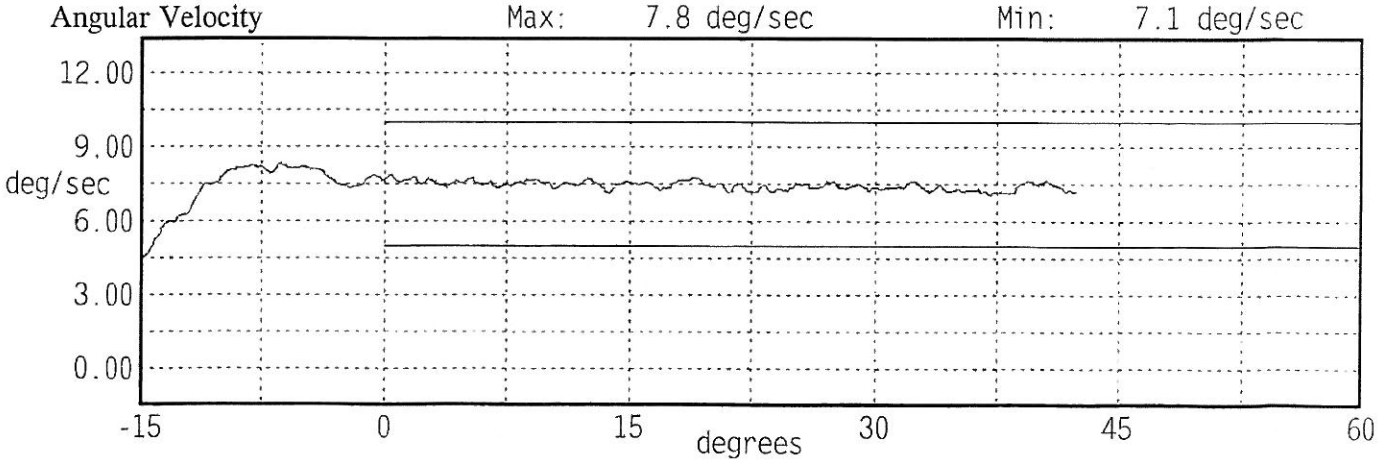
Moment About H-Point

Peak Moment: 210.7 Nm at 42.4 deg
Peak Angle: 42.4 deg at 210.7 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 7.1 deg/sec



Transportation Research Center Inc

Hybrid III Hip Range of Motion

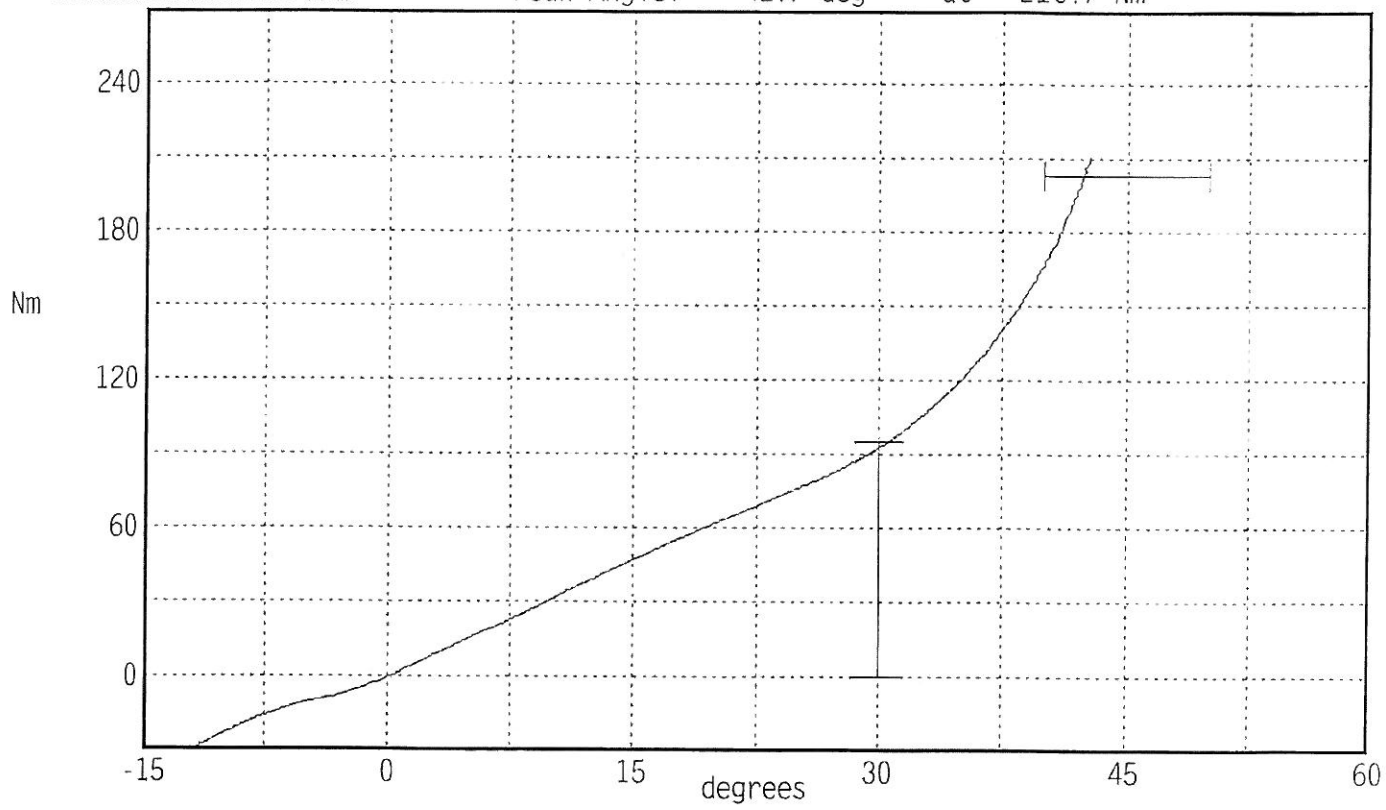
Serial Number: 043R
Test Number: 043C08
Comments:

Date: 10/29/2009
Time: 09:14

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.9	°C	Pass
Humidity	10 - 70	44	%	Pass
Moment at 30 deg	<= 94.9	92.7	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	42.3	deg	Pass
Average Velocity	5.0 - 10.0	7.4	deg/sec	Pass

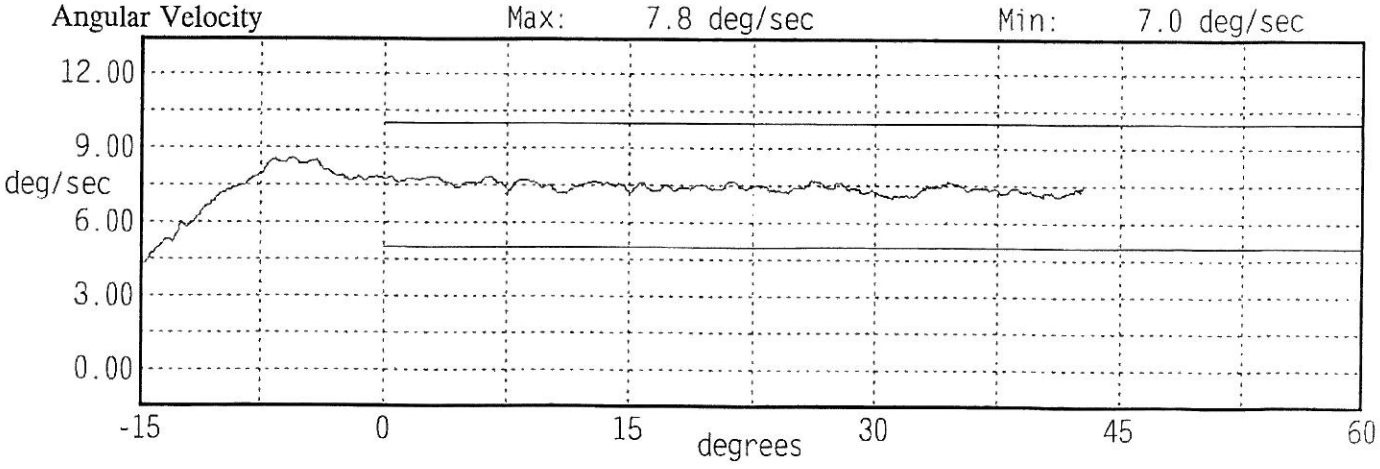
Moment About H-Point

Peak Moment: 210.7 Nm at 42.7 deg
Peak Angle: 42.7 deg at 210.7 Nm



Angular Velocity

Max: 7.8 deg/sec Min: 7.0 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.117 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,243.39 N	Yes

Test meets specifications.

Comments:

Technician

Approved

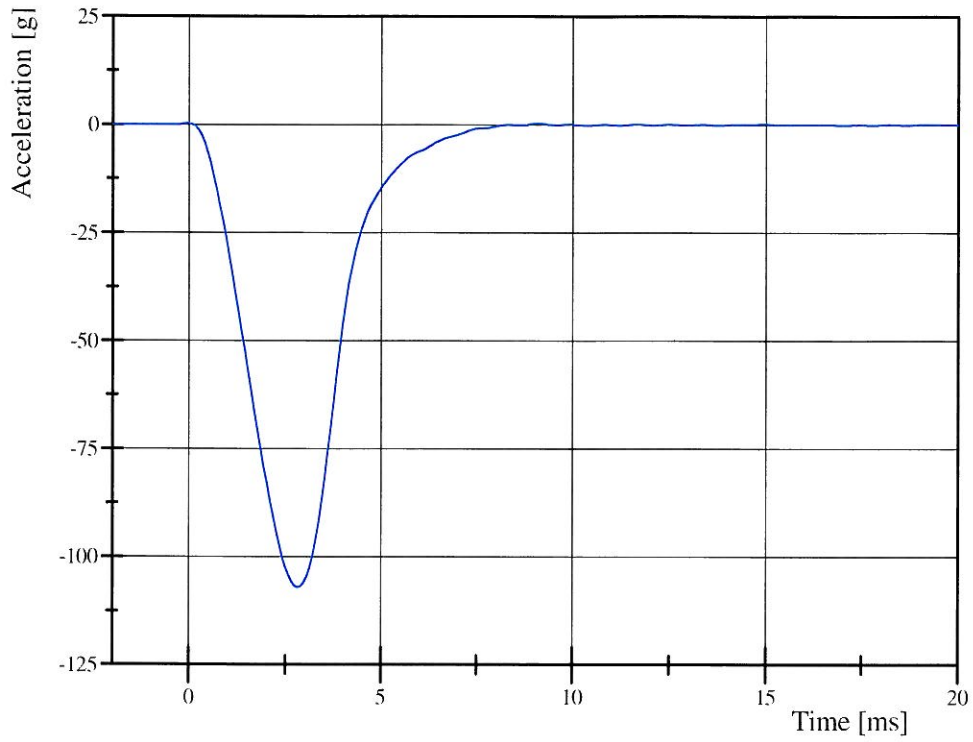
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:26:09 1814

Transportation Research Center Inc.

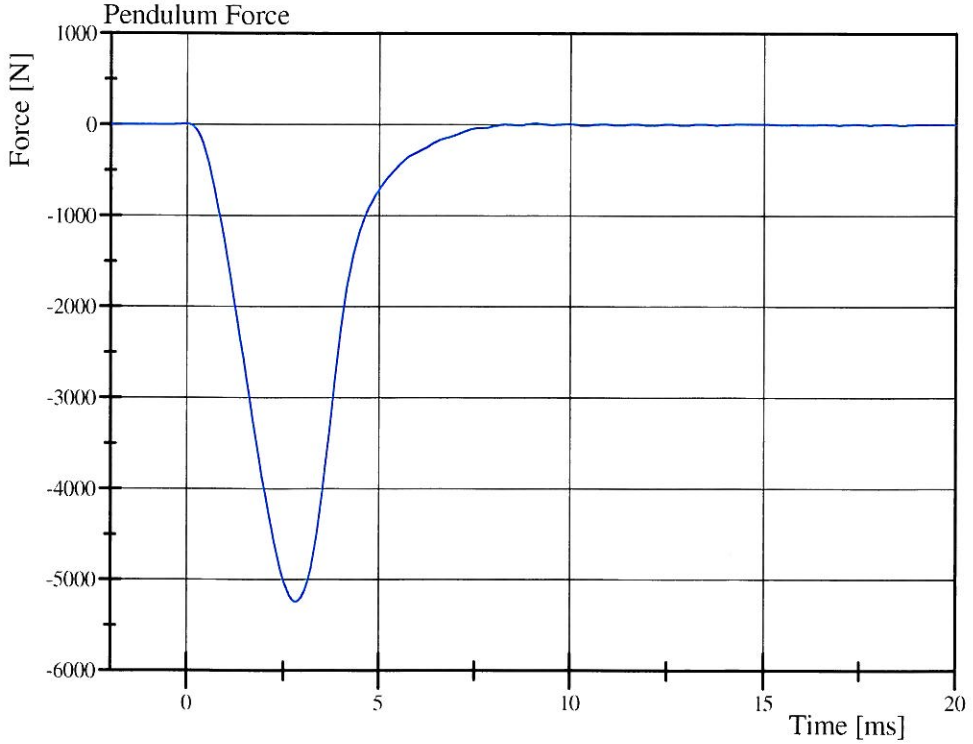
Left Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.3 g at 9.0 ms
Min: -107.2 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600
Max: 14.7 N at 9.0 ms
Min: -5,243.4 N at 2.8 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:26:16 1814

091118

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.117 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,090.55 N	Yes

Test meets specifications.

Comments:

Technician

Approved

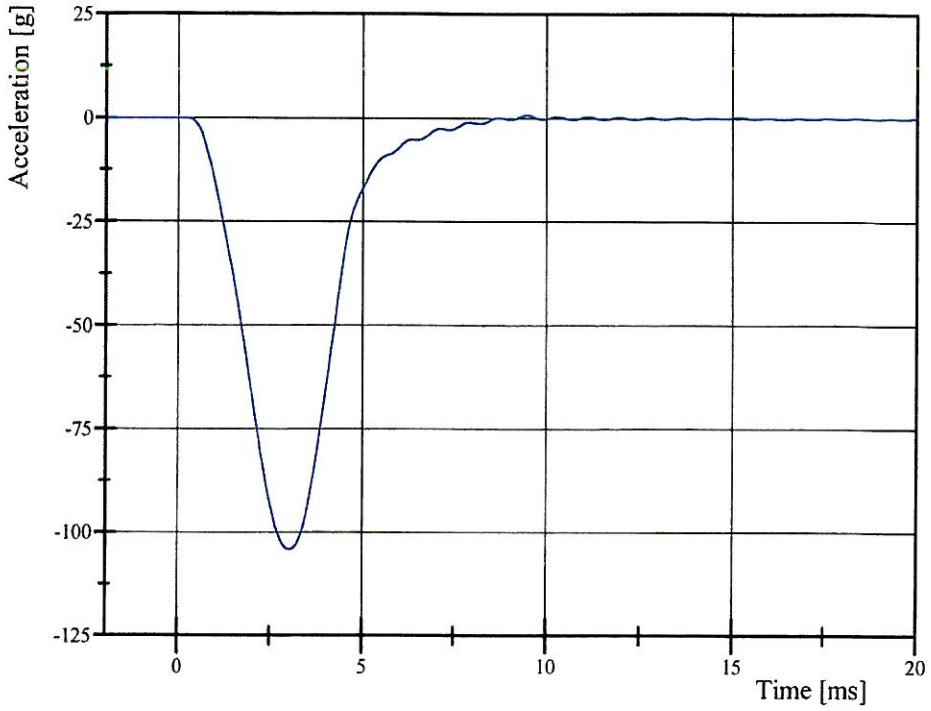
Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:29:45 1815

Transportation Research Center Inc.

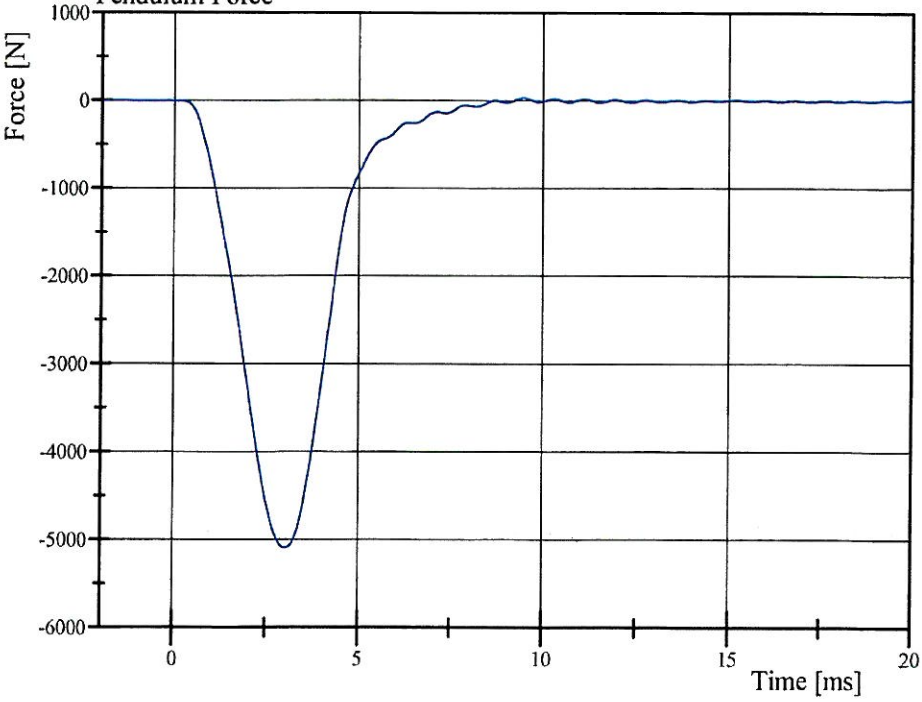
Right Knee Femur Response Test
HIII 50th Serial No. 043 Certification No. 8-1
Test Date: 10/29/2009

Pendulum Acceleration



Filter Class: CFC_600
Max: 0.7 g at 9.4 ms
Min: -104.0 g at 3.0 ms

Pendulum Force



Filter Class: CFC_600
Max: 35.5 N at 9.4 ms
Min: -5,090.5 N at 3.0 ms

Specification Source: CFR49 Part 572 Subpart E
with Polarity in accordance with J211

10.29.2009 08:29:51 1815

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

Sign Convention
SAE J211 MAR95

Accelerometers:	+X: Forward	
	+Y: Rightward	
	+Z: Downward	
Potentiometers:	+Chest longitudinal deflection:	Outward
	+Chest lateral deflection:	Rightward
	+Seat belt displacement:	Outward
	+Seat belt extension:	Elongation
	+Knee slider displacement:	Distance between femur and tibia increased (in relation to a seated dummy)
Rotation potentiometers:		
	+About the X-axis:	Left foot-eversion
		Right foot-inversion
	+About the Y-axis:	Left/right foot-dorsiflexion
	+About the Z-axis:	Left foot-internal
		Right foot-external
Load cells:	+Femur force:	Tension
	+Seat belt force:	Tension
	+Barrier force:	Tension
Neck load cells:	+X force:	Head pushed rearward
	+Y force:	Head pushed leftward
	+Z force:	Head pulled upward (tension on neck)
	+X moment:	Left ear rotating toward left shoulder
	+Y moment:	Chin rotating toward chest
	+Z moment:	Chin rotating toward left shoulder
Tibia load cells:	+X force:	Ankle forward, knee rearward
	+Y force:	Ankle rightward, knee leftward
	+Z force:	Tension
	+X moment:	Bottom of tibia moving leftward
	+Y moment:	Bottom of tibia moving rearward

Sign Convention (Continued)
SAE J211 MAR95

Lumbar load cells:	+X force:	Chest rearward, pelvis forward
	+Y force:	Chest leftward, pelvis rightward
	+Z force:	Chest upward, pelvis downward
	+X moment:	Left shoulder toward left hip
	+Y moment:	Sternum toward front of legs
	+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes
SAE J211 MAR95

Typical Test Measurements	Channel Class
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head Form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report Test Number 091118

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
1	Trig D1	10ZERO000000VO0A	EVENT	1	Logic	Bipolar	
2	P51954	11HEADCG00H3ACXA	Head Accel X	1000	g	-Bipolar	1-001 VRTC H3 50th.001
3	P58726	11HEADCG00H3ACYA	Head Accel Y	1000	g	-Bipolar	1-001 VRTC H3 50th.002
4	P51266	11HEADCG00H3ACZA	Head Accel Z	1000	g	-Bipolar	1-001 VRTC H3 50th.003
5	ARS-12K-ARS1082	11HEADCG00H3AVXA	Head (DTS ARS) Rate Gyro X	12000	°/s	Bipolar	1-001 HIII 50th VRTC.031
6	ARS-12K-ARS2630	11HEADCG00H3AVYA	Head (DTS ARS) Rate Gyro Y	12000	°/s	Bipolar	1-001 HIII 50th VRTC.032
7	ARS-12K-ARS1034	11HEADCG00H3AVZA	Head (DTS ARS) Rate Gyro Z	12000	°/s	Bipolar	1-001 HIII 50th VRTC.033
8	IF-205-261-FX	11NECKUP00H3FOXA	Neck Force X	8896	N	-Bipolar	1-001 VRTC H3 50th.007
9	IF-205-261-FY	11NECKUP00H3FOYA	Neck Force Y	8896	N	Bipolar	1-001 VRTC H3 50th.008
10	IF-205-261-FZ	11NECKUP00H3FOZA	Neck Force Z	13344	N	Bipolar	1-001 VRTC H3 50th.009
11	IF-205-261-MX	11NECKUP00H3MOXA	Neck Moment X	282.5	Nm	-Bipolar	1-001 VRTC H3 50th.010
12	IF-205-261-MY	11NECKUP00H3MOYA	Neck Moment Y	282.5	Nm	Bipolar	1-001 VRTC H3 50th.011
13	IF-205-261-MZ	11NECKUP00H3MOZA	Neck Moment Z	282.5	Nm	Bipolar	1-001 VRTC H3 50th.012
14	P52081	11CHSTCG00H3ACXA	Chest Accel X	1000	g	Bipolar	1-001 VRTC H3 50th.013
15	02I02I05-F11	11CHSTCG00H3ACYA	Chest Accel Y	1000	g	-Bipolar	1-001 VRTC H3 50th.014
16	P58771	11CHSTCG00H3ACZA	Chest Accel Z	1000	g	-Bipolar	1-001 VRTC H3 50th.015
17	CST001	11CHST0000H3DSXA	Chest Deflection X	84	mm	Bipolar	1-001 VRTC H3 50th.019
18	1794A-249-FX	11NECKLO00H3FOXA	Lower Neck Force X	8896	N	-Bipolar	1-001 VRTC H3 50th.025
19	1794A-249-FY	11NECKLO00H3FOYA	Lower Neck Force Y	8896	N	Bipolar	1-001 VRTC H3 50th.026
20	1794A-249-FZ	11NECKLO00H3FOZA	Lower Neck Force Z	13345	N	Bipolar	1-001 VRTC H3 50th.027
21	1794A-249-MX	11NECKLO00H3MOXA	Lower Neck Moment X	282.5	Nm	-Bipolar	1-001 VRTC H3 50th.028
22	1794A-249-MY	11NECKLO00H3MOYA	Lower Neck Moment Y	282.5	Nm	Bipolar	1-001 VRTC H3 50th.029
23	1794A-249-MZ	11NECKLO00H3MOZA	Lower Neck Moment Z	282.5	Nm	Bipolar	1-001 VRTC H3 50th.030
24	P58870	11PELVCG00H3ACXA	Pelvis Accel X	1000	g	-Bipolar	1-001 VRTC H3 50th.020
25	P52071	11PELVCG00H3ACYA	Pelvis Accel Y	1000	g	-Bipolar	1-001 VRTC H3 50th.021
26	P52086	11PELVCG00H3ACZA	Pelvis Accel Z	1000	g	-Bipolar	1-001 VRTC H3 50th.022
27	05G20-L12	13HEADCG00H3ACXA	Head Accel X	1000	g	Bipolar	3-110 HIII 50th FTSS.001
28	02A18-N15	13HEADCG00H3ACYA	Head Accel Y	1000	g	-Bipolar	3-110 HIII 50th FTSS.002
29	02I02I05-F09	13HEADCG00H3ACZA	Head Accel Z	1000	g	-Bipolar	3-110 HIII 50th FTSS.003
30	P51712	13HEADFR00H3ACYA	Head (FT) Accel Y	1000	g	-Bipolar	3-110 HIII 50th FTSS.004
31	P51717	13HEADFR00H3ACZA	Head (FT) Accel Z	1000	g	-Bipolar	3-110 HIII 50th FTSS.005
32	99H30-Z13	13HEADUP00H3ACXA	Head (TP) Accel X	1000	g	Bipolar	3-110 HIII 50th FTSS.006
33	B02A25-N01	13HEADUP00H3ACYA	Head (TP) Accel Y	1000	g	-Bipolar	3-110 HIII 50th FTSS.007
34	02A18-N01	13HEADLE00H3ACXA	Head (LT) Accel X	1000	g	Bipolar	3-110 HIII 50th FTSS.008
35	03F03J01-R11	13HEADLE00H3ACZA	Head (LT) Accel Z	1000	g	-Bipolar	3-110 HIII 50th FTSS.009

Channel Report Test Number 091118

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
36	1716A-1597-FX	13NECKUP00H3FOXA	Neck Force X	8896.4	N	-Bipolar	3-110 HIII 50th FTSS.010
37	1716A-1597-FY	13NECKUP00H3FOYA	Neck Force Y	8896.4	N	Bipolar	3-110 HIII 50th FTSS.011
38	1716A-1597-FZ	13NECKUP00H3FOZA	Neck Force Z	13344.6	N	Bipolar	3-110 HIII 50th FTSS.012
39	1716A-1597-MX	13NECKUP00H3MOXA	Neck Moment X	282.4	Nm	-Bipolar	3-110 HIII 50th FTSS.013
40	1716A-1597-MY	13NECKUP00H3MOYA	Neck Moment Y	282.4	Nm	Bipolar	3-110 HIII 50th FTSS.014
41	1716A-1597-MZ	13NECKUP00H3MOZA	Neck Moment Z	282.4	Nm	Bipolar	3-110 HIII 50th FTSS.015
42	1794A-0216-FX	13NECKLO00H3FOXA	Neck Lower Force X	13345	N	-Bipolar	3-110 HIII 50th FTSS.016
43	1794A-0216-FY	13NECKLO00H3FOYA	Neck Lower Force Y	13344.6	N	Bipolar	3-110 HIII 50th FTSS.017
44	1794A-0216-FZ	13NECKLO00H3FOZA	Neck Lower Force Z	13344.6	N	Bipolar	3-110 HIII 50th FTSS.018
45	1794A-0216-MX	13NECKLO00H3MOXA	Neck Lower Moment X	452	Nm	-Bipolar	3-110 HIII 50th FTSS.019
46	1794A-0216-MY	13NECKLO00H3MOYA	Neck Lower Moment Y	452	Nm	Bipolar	3-110 HIII 50th FTSS.020
47	1794A-0216-MZ	13NECKLO00H3MOZA	Neck Lower Moment Z	452	Nm	Bipolar	3-110 HIII 50th FTSS.021
48	99H12-F24	13CHSTCG00H3ACXA	Chest Accel X	1000	g	Bipolar	3-110 HIII 50th FTSS.022
49	02I02I05-F04	13CHSTCG00H3ACYA	Chest Accel Y	1000	g	-Bipolar	3-110 HIII 50th FTSS.023
50	03D03C27-N07	13CHSTCG00H3ACZA	Chest Accel Z	1000	g	-Bipolar	3-110 HIII 50th FTSS.024
51	CST110	13CHST0000H3DSXA	Chest Deflection X	84	mm	Bipolar	3-110 HIII 50th FTSS.028
52	P52008	13PELVCG00H3ACXA	Pelvis Accel X	1000	g	-Bipolar	3-110 HIII 50th FTSS.029
53	04J04I20-Z24	13PELVCG00H3ACYA	Pelvis Accel Y	1000	g	-Bipolar	3-110 HIII 50th FTSS.030
54	98H13-F19	13PELVCG00H3ACZA	Pelvis Accel Z	1000	g	-Bipolar	3-110 HIII 50th FTSS.031
55	P52023	14HEADCG00H3ACXA	Head Accel X	1000	g	-Bipolar	4-043 HIII 50th VRTC.001
56	P52013	14HEADCG00H3ACYA	Head Accel Y	1000	g	-Bipolar	4-043 HIII 50th VRTC.002
57	P52083	14HEADCG00H3ACZA	Head Accel Z	1000	g	-Bipolar	4-043 HIII 50th VRTC.003
58	ARS-12K-ARS2240	14HEADCG00H3AVXA	Head (DTS ARS) Rate Gyro X	12000	°/s	Bipolar	4-043 HIII 50th VRTC.025
59	ARS-12K-ARS2238	14HEADCG00H3AVYA	Head (DTS ARS) Rate Gyro Y	12000	°/s	Bipolar	4-043 HIII 50th VRTC.026
60	ARS-12K-ARS0253	14HEADCG00H3AVZA	Head (DTS ARS) Rate Gyro Z	12000	°/s	Bipolar	4-043 HIII 50th VRTC.027
61	1716A-798-FX	14NECKUP00H3FOXA	Upper Neck Force X	8896	N	-Bipolar	4-043 HIII 50th VRTC.004
62	1716A-798-FY	14NECKUP00H3FOYA	Upper Neck Force Y	8896	N	Bipolar	4-043 HIII 50th VRTC.005
63	1716A-798-FZ	14NECKUP00H3FOZA	Upper Neck Force Z	13344	N	Bipolar	4-043 HIII 50th VRTC.006
64	1716A-798-MX	14NECKUP00H3MOXA	Upper Neck Moment X	282	Nm	-Bipolar	4-043 HIII 50th VRTC.007
65	1716A-798-MY	14NECKUP00H3MOYA	Upper Neck Moment Y	282	Nm	Bipolar	4-043 HIII 50th VRTC.008
66	1716A-798-MZ	14NECKUP00H3MOZA	Upper Neck Moment Z	282	Nm	Bipolar	4-043 HIII 50th VRTC.009
67	P16899	14CHSTCG00H3ACXA	Chest Accel X	400	g	Bipolar	4-043 HIII 50th VRTC.010
68	P16517	14CHSTCG00H3ACYA	Chest Accel Y	400	g	-Bipolar	4-043 HIII 50th VRTC.011
69	P51702	14CHSTCG00H3ACZA	Chest Accel Z	400	g	-Bipolar	4-043 HIII 50th VRTC.012
70	84892-A-CST043	14CHST0000H3DSXA	Chest Deflection X	84	mm	-Bipolar	4-043 HIII 50th VRTC.013

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
71	1794A-250-FX	14NECKLO00H3FOXA	Lower Neck Force X	8896	N	-Bipolar	4-043 HIII 50th VRTC.016
72	1794A-250-FY	14NECKLO00H3FOYA	Lower Neck Force Y	8896	N	Bipolar	4-043 HIII 50th VRTC.017
73	1794A-250-FZ	14NECKLO00H3FOZA	Lower Neck Force Z	13345	N	Bipolar	4-043 HIII 50th VRTC.018
74	1794A-250-MX	14NECKLO00H3MOXA	Lower Neck Moment X	282	Nm	-Bipolar	4-043 HIII 50th VRTC.019
75	1794A-250-MY	14NECKLO00H3MOYA	Lower Neck Moment Y	282	Nm	Bipolar	4-043 HIII 50th VRTC.020
76	1794A-250-MZ	14NECKLO00H3MOZA	Lower Neck Moment Z	282	Nm	Bipolar	4-043 HIII 50th VRTC.021
77	P52108	14PELVCG00H3ACXA	Pelvis Accel X	2000	g	-Bipolar	4-043 HIII 50th VRTC.022
78	P51710	14PELVCG00H3ACYA	Pelvis Accel Y	2000	g	-Bipolar	4-043 HIII 50th VRTC.023
79	P16225	14PELVCG00H3ACZA	Pelvis Accel Z	2000	g	-Bipolar	4-043 HIII 50th VRTC.024
80	P61361	10VEHCCG0000ACXA	Vehicle Center of Gravity X-axis Acceleration	2000	g	Bipolar	
81	P61444	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-axis Acceleration	2000	g	-Bipolar	
82	P61746	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-axis Acceleration	2000	g	-Bipolar	
83	ARS-1500-ARS1055	10VEHCCG0000AVXA	Vehicle Center of Gravity ROLL RATE 1	1500	°/s	Bipolar	
84	ARS-1500-ARS0738	10VEHCCG0000AVYA	Vehicle Center of Gravity PITCH RATE 1	1500	°/s	Bipolar	
85	ARS-1500-ARS1091	10VEHCCG0000AVZA	Vehicle Center of Gravity YAW RATE 1	1500	°/s	Bipolar	
86	ARS-1500-ARS0737	10VEHCREDK00AVXA	Rear Deck (cargo area) ROLL RATE 1 Redur	1500	°/s	Bipolar	
87	ARS-1500-ARS0665	10VEHCREDK00AVYA	Rear Deck (cargo area) PITCH RATE 1 Redu	1500	°/s	Bipolar	
88	ARS-1500-ARS0732	10VEHCREDK00AVZA	Rear Deck (cargo area) YAW RATE 1 Redun	1500	°/s	Bipolar	
89	P62580	10ENGNTP0000ACXA	Top of Engine X-axis AccelTop of Engine Y-a	2000	g	Bipolar	
90	P62553	10ENGNTP0000ACYA	Top of Engine Y-axis Accel	2000	g	-Bipolar	
91	P62619	10ENGNTP0000ACZA	Top of Engine Z-axis Accel	2000	g	-Bipolar	
92	P46509	10ENGNBO0000ACXA	Bottom of Engine X-axis Accel	2000	g	Bipolar	
93	P58544	10ENGNBO0000ACYA	Bottom of Engine Y-axis Accel	2000	g	-Bipolar	
94	P61314	10ENGNBO0000ACZA	Left Bottom of Engine Z-axis Accel	2000	g	Bipolar	
95	A044158	10APILUPLE00ACXA	Left A-Pillar Upper X-Axis Acceleration	2000	g	-Bipolar	
96	P57332	10APILUPLE00ACYA	Left A-Pillar Upper Y-Axis Acceleration	2000	g	Bipolar	
97	A044169	10APILUPLE00ACZA	Left A-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
98	P57207	10APILLOLE00ACXA	Left A-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
99	P61536	10APILLOLE00ACYA	Left A-Pillar Lower Y-Axis Acceleration	2000	g	Bipolar	
100	P57876	10APILLOLE00ACZA	Left A-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
101	P62222	10APILUPRI00ACXA	Right A-Pillar Upper X-Axis Acceleration	2000	g	Bipolar	
102	P63126	10APILUPRI00ACYA	Right A-Pillar Upper Y-Axis Acceleration	2000	g	-Bipolar	
103	P62203	10APILUPRI00ACZA	Right A-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
104	P61434	10APILLORI00ACXA	Right A-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
105	P57784	10APILLORI00ACYA	Right A-Pillar Lower Y-Axis Acceleration	2000	g	-Bipolar	

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
106	P63168	10APILLORI00ACZA	Right A-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
107	P61280	10BPILUPLE00ACXA	Left B-Pillar Upper X-Axis Acceleration	2000	g	-Bipolar	
108	P61269	10BPILUPLE00ACYA	Left B-Pillar Upper Y-Axis Acceleration	2000	g	Bipolar	
109	P49042	10BPILUPLE00ACZA	Left B-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
110	P61754	10BPILLOLE00ACXA	Left B-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
111	P61732	10BPILLOLE00ACYA	Left B-Pillar Lower Y-Axis Acceleration	2000	g	Bipolar	
112	P61733	10BPILLOLE00ACZA	Left B-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
113	P62233	10BPILUPRI00ACXA	Right B-Pillar Upper X-Axis Acceleration	2000	g	-Bipolar	
114	P62232	10BPILUPRI00ACYA	Right B-Pillar Upper Y-Axis Acceleration	2000	g	-Bipolar	
115	P63133	10BPILUPRI00ACZA	Right B-Pillar Upper Z-Axis Acceleration (F)	2000	g	-Bipolar	
116	P61742	10BPILLORI00ACXA	Right B-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
117	P48116	10BPILLORI00ACYA	Right B-Pillar Lower Y-Axis Acceleration	2000	g	-Bipolar	
118	P63169	10BPILLORI00ACZA	Right B-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
119	P61319	10CPILUPLE00ACXA	Left C-Pillar Upper X-Axis Acceleration	2000	g	Bipolar	
120	P61400	10CPILUPLE00ACYA	Left C-Pillar Upper Y-Axis Acceleration	2000	g	Bipolar	
121	P48549	10CPILUPLE00ACZA	Left C-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
122	P61736	10CPILLOLE00ACXA	Left C-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
123	P61317	10CPILLOLE00ACYA	Left C-Pillar Lower Y-Axis Acceleration	2000	g	Bipolar	
124	P57430	10CPILLOLE00ACZA	Left C-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
125	P61712	10CPILUPRI00ACXA	Right C-Pillar Upper X-Axis Acceleration	2000	g	Bipolar	
126	P61767	10CPILUPRI00ACYA	Right C-Pillar Upper Y-Axis Acceleration	2000	g	-Bipolar	
127	P63158	10CPILUPRI00ACZA	Right C-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
128	P63147	10CPILLORI00ACXA	Right C-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
129	P63139	10CPILLORI00ACYA	Right C-Pillar Lower Y-Axis Acceleration	2000	g	-Bipolar	
130	P62241	10CPILLORI00ACZA	Right C-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
131	P61325	10DPILUPLE00ACXA	Left D-Pillar Upper X-Axis Acceleration	2000	g	Bipolar	
132	P62627	10DPILUPLE00ACYA	Left D-Pillar Upper Y-Axis Acceleration	2000	g	Bipolar	
133	P63141	10DPILUPLE00ACZA	Left D-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
134	P63135	10DPILLOLE00ACXA	Left D-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	
135	P46517	10DPILLOLE00ACYA	Left D-Pillar Lower Y-Axis Acceleration	2000	g	Bipolar	
136	P62208	10DPILLOLE00ACZA	Left D-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
137	P62630	10DPILUPRI00ACXA	Right D-Pillar Upper X-Axis Acceleration	2000	g	Bipolar	
138	P62197	10DPILUPRI00ACYA	Right D-Pillar Upper Y-Axis Acceleration	2000	g	-Bipolar	
139	P62225	10DPILUPRI00ACZA	Right D-Pillar Upper Z-Axis Acceleration	2000	g	-Bipolar	
140	P61765	10DPILLORI00ACXA	Right D-Pillar Lower X-Axis Acceleration	2000	g	Bipolar	

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
141	P61747	10DPILLORI00ACYA	Right D-Pillar Lower Y-Axis Acceleration	2000	g	-Bipolar	
142	P63189	10DPILLORI00ACZA	Right D-Pillar Lower Z-Axis Acceleration	2000	g	-Bipolar	
143	P63123	102RDK000000ACXA	Vehicle Rear Deck X-axis Acceleration	2000	g	Bipolar	
144	P62632	102RDK000000ACYA	Vehicle Rear Deck Y-axis Acceleration	2000	g	-Bipolar	
145	P34982	102RDK000000ACZA	Vehicle Rear Deck Z-axis Acceleration	2000	g	-Bipolar	
146	P58572	11SEAT000000ACXA	LF Seat Position (on floor) X-axis Acceleratio	2000	g	Bipolar	
147	P58024	11SEAT000000ACYA	LF Seat Position (on floor) Y-axis Acceleratio	2000	g	Bipolar	
148	P61388	11SEAT000000ACZA	LF Seat Position (on floor) Z-axis Acceleratio	2000	g	-Bipolar	
149	P58576	13SEAT000000ACXA	RF Seat Position (on floor) X-axis Acceleratio	2000	g	Bipolar	
150	P62555	13SEAT000000ACYA	RF Seat Position (on floor) Y-axis Acceleratio	2000	g	-Bipolar	
151	P61731	13SEAT000000ACZA	RF Seat Position (on floor) Z-axis Acceleratio	2000	g	-Bipolar	
152	P58607	14SEAT000000ACXA	LR Seat Position (on floor) X-axis Acceleratio	2000	g	Bipolar	
153	P61310	14SEAT000000ACYA	LR Seat Position (on floor) Y-axis Acceleratio	2000	g	-Bipolar	
154	P61537	14SEAT000000ACZA	LR Seat Position (on floor) Z-axis Acceleratio	2000	g	-Bipolar	
155	P62573	16SEAT000000ACXA	RR Seat Position (on floor) X-axis Acceleratic	2000	g	Bipolar	
156	P63131	16SEAT000000ACYA	RR Seat Position (on floor) Y-axis Acceleratic	2000	g	-Bipolar	
157	P64806	16SEAT000000ACZA	RR Seat Position (on floor) Z-axis Acceleratio	2000	g	-Bipolar	
158	3419-830	11SEBE0000B5FO0A	Driver Lap Belt Force (1015)	15568	N	Bipolar	
159	X08012	11SEBE0000B3FO0A	Driver Shoulder Belt Force (J1)	16000	N	Bipolar	
160	3419-829	13SEBE0000B5FO0A	Front Pass. Lap Belt Force	15568	N	Bipolar	
161	X08014	13SEBE0000B3FO0A	Front Pass. Shldr. Belt Force (j10)	16000	N	Bipolar	
162	X08013	14SEBE0000B5FO0A	Left Rear Pass. Lap Belt Force	16000	N	Bipolar	
163	X08010	14SEBE0000B3FO0A	Left Rear Pass. Shldr. Belt Force (152)	16000	N	Bipolar	
164	B1801244B	11SEBE0000B5DS0A	Driver Seat Belt Spool Potentiometer	750	mm	Bipolar	
165	K1506281A	13SEBE0000B5DS0A	Right Front Belt Spool Potentiometers (S3)	1270	mm	Bipolar	
166	G1805342B	14SEBE0000B5DS0A	Left Rear Passenger Belt Spool Potentiomete	750	mm	Bipolar	
167	Bit.00	11CONT000023EV00	DRIV. Head Contact Switch	1	Logic	Bipolar	
168	Bit.01	11CONT000024EV00	DRIV. Thorax Contact Switch	1	Logic	Bipolar	
169	Bit.02	11CONT000025EV00	DRIV. Pelvis Contact Switch	1	Logic	Bipolar	
170	Bit.03	13CONT000026EV00	Pass. Head Contact Switch	1	Logic	Bipolar	
171	Bit.05	13CONT000027EV00	Pass. Thorax Contact Switch	1	Logic	Bipolar	
172	Bit.06	13CONT000028EV00	Pass. Pelvis Contact Switch	1	Logic	Bipolar	
173	Bit.07	14CONT000029EV00	Left Rear Pass. Head Contact Switch	1	Logic	Bipolar	
174	Bit.08	14CONT000030EV00	Left Rear Pass. Thorax Contact Switch	1	Logic	Bipolar	
175	Bit.09	14CONT000031EV00	Left Rear Pass. Pelvis Contact Switch	1	Logic	Bipolar	

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
176	ABT squib volts	11BCKLIN0000VO0A	Driver Buckle Voltage	50	V	Bipolar	
177	ABT squib volts	14BCKLIN0000VO0A	Left Rear Buckle Voltage	50	V	Bipolar	
178	ABT squib volts	13BCKLIN0000VO0A	Right Front Buckle Voltage	50	V	Bipolar	
179	ABT squib volts	13RETR000000VO0A	Right Front Retractor Voltage	50	V	Bipolar	
180	ABT squib volts	11AIRB000000VO0A	Left Side Curtain Voltage	50	V	Bipolar	
181	ABT squib volts	13AIRB000000VO0A	Right Side Curtain Voltage	50	V	Bipolar	
183	P62548	M2VEHC000000ACXA	Cart X	2000	g	Bipolar	
184	P62622	M2VEHC000000ACYA	Cart Y	2000	g	-Bipolar	
185	P62625	M2VEHC000000ACZA	Cart Z	2000	g	-Bipolar	
	ABT squib amps	11AIRB000000CU0A	Left Side Curtain Current	5	A	Bipolar	
	ABT squib amps	11AIRB020000CU0A	Left Rear Buckle Current	5	A	Bipolar	
	ABT squib amps	11BCKLIN0000CU0A	Driver Buckle Current	5	A	Bipolar	
	ABT squib amps	13AIRB000000CU0A	Right Side Curtain Current	5	A	Bipolar	
	ABT squib amps	13BCKLIN0000CU0A	Right Front Buckle Current	5	A	Bipolar	
	ABT squib amps	13RETR000000CU0A	Right Front Retractor Current	5	A	Bipolar	

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Chann	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
1	11HEADCG00H3ACXA	Driver Head X-Axis Acceleration	1000	+	yes	1000
2	11HEADCG00H3ACYA	Driver Head Y-Axis Acceleration	1000	+	yes	1000
3	11HEADCG00H3ACZA	Driver Head Z-Axis Acceleration	1000	+	yes	1000
3A	11HEADCG00H3ACRA	Driver Head Resultant Acceleration	1000			
4	11HEADCG00H3AVXA	Driver Head (DTS ARS) Rate Gyro X	1000	+	yes	12000
5	11HEADCG00H3AVYA	Driver Head (DTS ARS) Rate Gyro Y	1000	+	yes	12000
6	11HEADCG00H3AVZA	Driver Head (DTS ARS) Rate Gyro Z	1000	+	yes	12000
7	11NECKUP00H3FOXA	Driver Upper Neck X-Axis Force	1000	+	yes	8896
8	11NECKUP00H3FOYA	Driver Upper Neck Y-Axis Force	1000	+	yes	8896
9	11NECKUP00H3FOZA	Driver Upper Neck Z-Axis Force	1000	+	yes	13344
10	11NECKUP00H3MOXA	Driver Upper Neck Moment About X Axis	600	+	yes	282.5
11	11NECKUP00H3MOYA	Driver Upper Neck Moment About Y Axis	600	+	yes	282.5
12	11NECKUP00H3MOZA	Driver Upper Neck Moment About Z Axis	600	+	yes	282.5
13	11CHSTCG00H3ACXA	Driver Chest X-Axis Acceleration	180	+	yes	1000
14	11CHSTCG00H3ACYA	Driver Chest Y-Axis Acceleration	180	+	yes	1000
15	11CHSTCG00H3ACZA	Driver Chest Z-Axis Acceleration	180	+	yes	1000
15A	11CHSTCG00H3ACRA	Driver Chest Resultant Acceleration	180			
16	11CHST0000H3DSXA	Driver Chest X-Axis Displacement	600	+	yes	84
17	11NECKLO00H3FOXA	Driver Lower Neck X-Axis Force	1000	+	yes	8896
18	11NECKLO00H3FOYA	Driver Lower Neck Y-Axis Force	1000	+	yes	8896
19	11NECKLO00H3FOZA	Driver Lower Neck Z-Axis Force	1000	+	yes	13345
20	11NECKLO00H3MOXA	Driver Lower Neck Moment About X Axis	600	+	yes	282.5
21	11NECKLO00H3MOYA	Driver Lower Neck Moment About Y Axis	600	+	yes	282.5
22	11NECKLO00H3MOZA	Driver Lower Neck Moment About Z Axis	600	+	yes	282.5
23	11PELVCG00H3ACXA	Driver Pelvis X-Axis Acceleration	1000	+	yes	1000
24	11PELVCG00H3ACYA	Driver Pelvis Y-Axis Acceleration	1000	+	yes	1000
25	11PELVCG00H3ACZA	Driver Pelvis Z-Axis Acceleration	1000	+	yes	1000
25A	11PELVCG00H3ACRA	Driver Pelvis Resultant Acceleration	1000			
26	13HEADCG00H3ACXA	Right Front Passenger Head X-Axis Acceleration	1000	+	yes	1000
27	13HEADCG00H3ACYA	Right Front Passenger Head Y-Axis Acceleration	1000	+	yes	1000
28	13HEADCG00H3ACZA	Right Front Passenger Head Z-Axis Acceleration	1000	+	yes	1000
28A	13HEADCG00H3ACRA	Right Front Passenger Head Resultant Acceleration	1000			
29	13HEADFR00H3ACYA	Right Front Passenger Head Front Y-Axis Acceleration	1000	+	yes	1000
30	13HEADFR00H3ACZA	Right Front Passenger Head Front Z-Axis Acceleration	1000	+	yes	1000
31	13HEADUP00H3ACXA	Right Front Passenger Head Top X-Axis Acceleration	1000	+	yes	1000
32	13HEADUP00H3ACYA	Right Front Passenger Head Top Y-Axis Acceleration	1000	+	yes	1000
33	13HEADLE00H3ACXA	Right Front Passenger Head Left X-Axis Acceleration	1000	+	yes	1000
34	13HEADLE00H3ACZA	Right Front Passenger Head Left Z-Axis Acceleration	1000	+	yes	1000
35	13NECKUP00H3FOXA	Right Front Passenger Upper Neck X-Axis Force	1000	+	yes	8896.4

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Chann	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
36	13NECKUP00H3FOYA	Right Front Passenger Upper Neck Y-Axis Force	1000	+	yes	8896.4
37	13NECKUP00H3FOZA	Right Front Passenger Upper Neck Z-Axis Force	1000	+	yes	13344.6
38	13NECKUP00H3MOXA	Right Front Passenger Upper Neck Moment About X Axis	600	+	yes	282.4
39	13NECKUP00H3MOYA	Right Front Passenger Upper Neck Moment About Y Axis	600	+	yes	282.4
40	13NECKUP00H3MOZA	Right Front Passenger Upper Neck Moment About Z Axis	600	+	yes	282.4
41	13NECKLO00H3FOXA	Right Front Passenger Lower Neck X-Axis Force	1000	+	yes	13345
42	13NECKLO00H3FOYA	Right Front Passenger Lower Neck Y-Axis Force	1000	+	yes	13344.6
43	13NECKLO00H3FOZA	Right Front Passenger Lower Neck Z-Axis Force	1000	+	yes	13344.6
44	13NECKLO00H3MOXA	Right Front Passenger Lower Neck Moment About X Axis	600	+	yes	452
45	13NECKLO00H3MOYA	Right Front Passenger Lower Neck Moment About Y Axis	600	+	yes	452
46	13NECKLO00H3MOZA	Right Front Passenger Lower Neck Moment About Z Axis	600	+	yes	452
47	13CHSTCG00H3ACXA	Right Front Passenger Chest X-Axis Acceleration	180	+	yes	1000
48	13CHSTCG00H3ACYA	Right Front Passenger Chest Y-Axis Acceleration	180	+	yes	1000
49	13CHSTCG00H3ACZA	Right Front Passenger Chest Z-Axis Acceleration	180	+	yes	1000
49A	13CHSTCG00H3ACRA	Right Front Passenger Chest Resultant Acceleration	180			
50	13CHST0000H3DSXA	Right Front Passenger Chest X-Axis Displacement	600	+	yes	84
51	13PELVCG00H3ACXA	Right Front Passenger Pelvis X-Axis Acceleration	1000	+	yes	1000
52	13PELVCG00H3ACYA	Right Front Passenger Pelvis Y-Axis Acceleration	1000	+	yes	1000
53	13PELVCG00H3ACZA	Right Front Passenger Pelvis Z-Axis Acceleration	1000	+	yes	1000
53A	13PELVCG00H3ACRA	Right Front Passenger Pelvis Resultant Acceleration	1000			
54	14HEADCG00H3ACXA	Left Rear Passenger Head X-Axis Acceleration	1000	+	yes	1000
55	14HEADCG00H3ACYA	Left Rear Passenger Head Y-Axis Acceleration	1000	+	yes	1000
56	14HEADCG00H3ACZA	Left Rear Passenger Head Z-Axis Acceleration	1000	+	yes	1000
56A	14HEADCG00H3ACRA	Left Rear Passenger Head Resultant Acceleration	1000			
57	14HEADCG00H3AVXA	Left Rear Passenger Head (DTS ARS) Rate Gyro X	1000	+	yes	12000
58	14HEADCG00H3AVYA	Left Rear Passenger Head (DTS ARS) Rate Gyro Y	1000	+	yes	12000
59	14HEADCG00H3AVZA	Left Rear Passenger Head (DTS ARS) Rate Gyro Z	1000	+	yes	12000
60	14NECKUP00H3FOXA	Left Rear Passenger Upper Neck X-Axis Force	1000	+	yes	8896
61	14NECKUP00H3FOYA	Left Rear Passenger Upper Neck Y-Axis Force	1000	+	yes	8896
62	14NECKUP00H3FOZA	Left Rear Passenger Upper Neck Z-Axis Force	1000	+	yes	13344
63	14NECKUP00H3MOXA	Left Rear Passenger Upper Neck Moment About X Axis	600	+	yes	282
64	14NECKUP00H3MOYA	Left Rear Passenger Upper Neck Moment About Y Axis	600	+	yes	282
65	14NECKUP00H3MOZA	Left Rear Passenger Upper Neck Moment About Z Axis	600	+	yes	282
66	14CHSTCG00H3ACXA	Left Rear Passenger Chest X-Axis Acceleration	180	+	yes	400
67	14CHSTCG00H3ACYA	Left Rear Passenger Chest Y-Axis Acceleration	180	+	yes	400
68	14CHSTCG00H3ACZA	Left Rear Passenger Chest Z-Axis Acceleration	180	+	yes	400
68A	14CHSTCG00H3ACRA	Left Rear Passenger Chest Resultant Acceleration	180			
69	14CHST0000H3DSXA	Left Rear Passenger Chest X-Axis Displacement	600	+	yes	84
70	14PELVCG00H3ACXA	Left Rear Passenger Pelvis X-Axis Acceleration	1000	+	yes	2000

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Channe	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
71	14PELVCG00H3ACYA	Left Rear Passenger Pelvis Y-Axis Acceleration	1000	+	yes	2000
72	14PELVCG00H3ACZA	Left Rear Passenger Pelvis Z-Axis Acceleration	1000	+	yes	2000
72A	14PELVCG00H3ACRA	Left Rear Passenger Pelvis Resultant Acceleration	1000			
73	14NECKLO00H3FOXA	Left Rear Passenger Lower Neck X-Axis Force	1000	+	yes	8896
74	14NECKLO00H3FOYA	Left Rear Passenger Lower Neck Y-Axis Force	1000	+	yes	8896
75	14NECKLO00H3FOZA	Left Rear Passenger Lower Neck Z-Axis Force	1000	+	yes	13345
76	14NECKLO00H3MOXA	Left Rear Passenger Lower Neck Moment About X Axis	600	+	yes	282
77	14NECKLO00H3MOYA	Left Rear Passenger Lower Neck Moment About Y Axis	600	+	yes	282
78	14NECKLO00H3MOZA	Left Rear Passenger Lower Neck Moment About Z Axis	600	+	yes	282
79	10VEHCCG0000ACXA	Vehicle Center of Gravity X-Axis Acceleration	60	+	yes	2000
80	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-Axis Acceleration	60	+	yes	2000
81	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-Axis Acceleration	60	+	yes	2000
81A	10VEHCCG0000ACRA	Vehicle Center of Gravity Resultant Acceleration	60			
82	10VEHCCG0000AVXA	Vehicle Roll Rate	600	+	yes	1500
83	10VEHCCG0000AVYA	Vehicle Pitch Rate	600	+	yes	1500
84	10VEHCCG0000AVZA	Vehicle Yaw Rate	600	+	yes	1500
85	10VEHCREDK00AVXA	Rear Deck Roll Rate Redundant	600	+	yes	1500
86	10VEHCREDK00AVYA	Rear Deck Pitch Rate Redundant	600	+	yes	1500
87	10VEHCREDK00AVZA	Rear Deck Yaw Rate Redundant	600	+	yes	1500
88	10ENGNTP0000ACXA	Top of Engine X-Axis Acceleration	60	+	yes	2000
89	10ENGNTP0000ACYA	Top of Engine Y-Axis Acceleration	60	+	yes	2000
90	10ENGNTP0000ACZA	Top of Engine Z-Axis Acceleration	60	+	yes	2000
90A	10ENGNTP0000ACRA	Top of Engine Resultant Acceleration	60			
91	10ENGNBO0000ACXA	Bottom of Engine X-Axis Acceleration	60	+	yes	2000
92	10ENGNBO0000ACYA	Bottom of Engine Y-Axis Acceleration	60	+	yes	2000
93	10ENGNBO0000ACZA	Bottom of Engine Z-Axis Acceleration	60	+	yes	2000
93A	10ENGNBO0000ACRA	Bottom of Engine Resultant Acceleration	60			
94	10APILUPLE00ACXA	Left A-Pillar Upper X-Axis Acceleration	60	+	yes	2000
95	10APILUPLE00ACYA	Left A-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
96	10APILUPLE00ACZA	Left A-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
96A	10APILUPLE00ACRA	Left A-Pillar Upper Resultant Acceleration	60			
97	10APILLOLE00ACXA	Left A-Pillar Lower X-Axis Acceleration	60	+	yes	2000
98	10APILLOLE00ACYA	Left A-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
99	10APILLOLE00ACZA	Left A-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
99A	10APILLOLE00ACRA	Left A-Pillar Lower Resultant Acceleration	60			
100	10APILUPRI00ACXA	Right A-Pillar Upper X-Axis Acceleration	60	+	yes	2000
101	10APILUPRI00ACYA	Right A-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
102	10APILUPRI00ACZA	Right A-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
102A	10APILUPRI00ACRA	Right A-Pillar Upper Resultant Acceleration	60			

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Chann	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
103	10APILLORI00ACXA	Right A-Pillar Lower X-Axis Acceleration	60	+	yes	2000
104	10APILLORI00ACYA	Right A-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
105	10APILLORI00ACZA	Right A-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
105A	10APILLORI00ACRA	Right A-Pillar Lower Resultant Acceleration	60			
106	10BPILUPLE00ACXA	Left B-Pillar Upper X-Axis Acceleration	60	+	yes	2000
107	10BPILUPLE00ACYA	Left B-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
108	10BPILUPLE00ACZA	Left B-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
108A	10BPILUPLE00ACRA	Left B-Pillar Upper Resultant Acceleration	60			
109	10BPILLOLE00ACXA	Left B-Pillar Lower X-Axis Acceleration	60	+	yes	2000
110	10BPILLOLE00ACYA	Left B-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
111	10BPILLOLE00ACZA	Left B-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
111A	10BPILLOLE00ACRA	Left B-Pillar Lower Resultant Acceleration	60			
112	10BPILUPRI00ACXA	Right B-Pillar Upper X-Axis Acceleration	60	+	yes	2000
113	10BPILUPRI00ACYA	Right B-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
114	10BPILUPRI00ACZA	Right B-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
114A	10BPILUPRI00ACRA	Right B-Pillar Upper Resultant Acceleration	60			
115	10BPILLORI00ACXA	Right B-Pillar Lower X-Axis Acceleration	60	+	yes	2000
116	10BPILLORI00ACYA	Right B-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
117	10BPILLORI00ACZA	Right B-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
117A	10BPILLORI00ACRA	Right B-Pillar Lower Resultant Acceleration	60			
118	10CPILUPLE00ACXA	Left C-Pillar Upper X-Axis Acceleration	60	+	yes	2000
119	10CPILUPLE00ACYA	Left C-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
120	10CPILUPLE00ACZA	Left C-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
120A	10CPILUPLE00ACRA	Left C-Pillar Upper Resultant Acceleration	60			
121	10CPILLOLE00ACXA	Left C-Pillar Lower X-Axis Acceleration	60	+	yes	2000
122	10CPILLOLE00ACYA	Left C-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
123	10CPILLOLE00ACZA	Left C-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
123A	10CPILLOLE00ACRA	Left C-Pillar Lower Resultant Acceleration	60			
124	10CPILUPRI00ACXA	Right C-Pillar Upper X-Axis Acceleration	60	+	yes	2000
125	10CPILUPRI00ACYA	Right C-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
126	10CPILUPRI00ACZA	Right C-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
126A	10CPILUPRI00ACRA	Right C-Pillar Upper Resultant Acceleration	60			
127	10CPILLORI00ACXA	Right C-Pillar Lower X-Axis Acceleration	60	+	yes	2000
128	10CPILLORI00ACYA	Right C-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
129	10CPILLORI00ACZA	Right C-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
129A	10CPILLORI00ACRA	Right C-Pillar Lower Resultant Acceleration	60			
130	10DPILUPLE00ACXA	Left D-Pillar Upper X-Axis Acceleration	60	+	yes	2000
131	10DPILUPLE00ACYA	Left D-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
132	10DPILUPLE00ACZA	Left D-Pillar Upper Z-Axis Acceleration	60	+	yes	2000

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Chann	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
132A	10DPILUPLE00ACRA	Left D-Pillar Upper Resultant Acceleration	60			
133	10DPILLOLE00ACXA	Left D-Pillar Lower X-Axis Acceleration	60	+	yes	2000
134	10DPILLOLE00ACYA	Left D-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
135	10DPILLOLE00ACZA	Left D-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
135A	10DPILLOLE00ACRA	Left D-Pillar Lower Resultant Acceleration	60			
136	10DPILUPRI00ACXA	Right D-Pillar Upper X-Axis Acceleration	60	+	yes	2000
137	10DPILUPRI00ACYA	Right D-Pillar Upper Y-Axis Acceleration	60	+	yes	2000
138	10DPILUPRI00ACZA	Right D-Pillar Upper Z-Axis Acceleration	60	+	yes	2000
138A	10DPILUPRI00ACRA	Right D-Pillar Upper Resultant Acceleration	60			
139	10DPILLORI00ACXA	Right D-Pillar Lower X-Axis Acceleration	60	+	yes	2000
140	10DPILLORI00ACYA	Right D-Pillar Lower Y-Axis Acceleration	60	+	yes	2000
141	10DPILLORI00ACZA	Right D-Pillar Lower Z-Axis Acceleration	60	+	yes	2000
141A	10DPILLORI00ACRA	Right D-Pillar Lower Resultant Acceleration	60			
142	102RDK000000ACXA	Vehicle Rear Deck X-Axis Acceleration	60	+	yes	2000
143	102RDK000000ACYA	Vehicle Rear Deck Y-Axis Acceleration	60	+	yes	2000
144	102RDK000000ACZA	Vehicle Rear Deck Z-Axis Acceleration	60	+	yes	2000
144A	102RDK000000ACRA	Vehicle Rear Deck Resultant Acceleration	60			
145	11SEAT000000ACXA	LF Seat Position (on floor) X-Axis Acceleration	60	+	yes	2000
146	11SEAT000000ACYA	LF Seat Position (on floor) Y-Axis Acceleration	60	+	yes	2000
147	11SEAT000000ACZA	LF Seat Position (on floor) Z-Axis Acceleration	60	+	yes	2000
147A	11SEAT000000ACRA	LF Seat Position (on floor) Resultant Acceleration	60			
148	13SEAT000000ACXA	RF Seat Position (on floor) X-Axis Acceleration	60	+	yes	2000
149	13SEAT000000ACYA	RF Seat Position (on floor) Y-Axis Acceleration	60	+	yes	2000
150	13SEAT000000ACZA	RF Seat Position (on floor) Z-Axis Acceleration	60	+	yes	2000
150A	13SEAT000000ACRA	RF Seat Position (on floor) Resultant Acceleration	60			
151	14SEAT000000ACXA	LR Seat Position (on floor) X-Axis Acceleration	60	+	yes	2000
152	14SEAT000000ACYA	LR Seat Position (on floor) Y-Axis Acceleration	60	+	yes	2000
153	14SEAT000000ACZA	LR Seat Position (on floor) Z-Axis Acceleration	60	+	yes	2000
153A	14SEAT000000ACRA	LR Seat Position (on floor) Resultant Acceleration	60			
154	16SEAT000000ACXA	RR Seat Position (on floor) X-Axis Acceleration	60	+	yes	2000
155	16SEAT000000ACYA	RR Seat Position (on floor) Y-Axis Acceleration	60	+	yes	2000
156	16SEAT000000ACZA	RR Seat Position (on floor) Z-Axis Acceleration	60	+	yes	2000
156A	16SEAT000000ACRA	RR Seat Position (on floor) Resultant Acceleration	60			
157	11SEBE0000B5FO0A	Driver Lap Belt Force	60	+	yes	15568
158	11SEBE0000B3FO0A	Driver Shoulder Belt Force	60	+	yes	16000
159	13SEBE0000B5FO0A	Right Front Passenger Lap Belt Force	60	+	yes	15568
160	13SEBE0000B3FO0A	Right Front Passenger Shoulder Belt Force	60	+	yes	16000
161	14SEBE0000B5FO0A	Left Rear Passenger Lap Belt Force	60	+	yes	16000
162	14SEBE0000B3FO0A	Left Rear Passenger Shoulder Belt Force	60	+	yes	16000

Command File Test Number 091118

Chann	ISO mnemonic	Channel Title	Filte	Fl	Zer	Full Scale
163	11SEBE0000B5DS0A	Driver Seat Belt Spool Potentiometer	1000	+	yes	750
164	13SEBE0000B5DS0A	Right Front Passenger Belt Spool Potentiometer	1000	+	yes	1270
165	14SEBE0000B5DS0A	Left Rear Passenger Belt Spool Potentiometer	1000	+	yes	750
166	11CONT000023EV00	Driver Head Contact	0	+	no	1
167	11CONT000024EV00	Driver Thorax Contact	0	+	no	1
168	11CONT000025EV00	Driver Pelvis Contact	0	+	no	1
169	13CONT000026EV00	Right Front Passenger Head Contact Switch	0	+	no	1
170	13CONT000027EV00	Right Front Passenger Thorax Contact Switch	0	+	no	1
171	13CONT000028EV00	Right Front Passenger Pelvis Contact Switch	0	+	no	1
172	14CONT000029EV00	Left Rear Passenger Head Contact	0	+	no	1
173	14CONT000030EV00	Left Rear Passenger Thorax Contact	0	+	no	1
174	14CONT000031EV00	Left Rear Passenger Pelvis Contact	0	+	no	1
175	11BCKLIN0000VO0A	Driver Buckle Voltage	1000	+	no	50
176	14BCKLIN0000VO0A	Left Rear Buckle Voltage	1000	+	no	50
177	13BCKLIN0000VO0A	Right Front Passenger Inner Buckle Voltage	1000	+	no	50
178	13RETR000000VO0A	Right Front Passenger Retractor Voltage	1000	+	no	50
179	11AIRB000000VO0A	Left Side Curtain Voltage	1000	+	no	50
180	13AIRB000000VO0A	Right Side Curtain Voltage	1000	+	no	50
181	11AIRB000000CU0A	Left Side Curtain Current	1000	+	no	5
182	11AIRB020000CU0A	Left Rear Buckle Current	1000	+	no	5
183	11BCKLIN0000CU0A	Driver Buckle Current	1000	+	no	5
184	13AIRB000000CU0A	Right Side Curtain Current	1000	+	no	5
185	13BCKLIN0000CU0A	Right Front Passenger Inner Buckle Current	1000	+	no	5
186	13RETR000000CU0A	Right Front Passenger Retractor Current	1000	+	no	5
187	M2VEHC000000ACXA	Cart X-Axis Acceleration	60	+	yes	2000
188	M2VEHC000000ACYA	Cart Y-Axis Acceleration	60	+	yes	2000
189	M2VEHC000000ACZA	Cart Z-Axis Acceleration	60	+	yes	2000
189A	M2VEHC000000ACRA	Cart Resultant Acceleration	60			

APPENDIX E

INSIA REPORT ON STRUCTURAL MEASUREMENTS

STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

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March, 1999

REPORT DOCUMENTATION PAGE
Title: *STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY*
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Suplementary notes: Under contract to: THE EUROPEAN COMMUNITY Project: "Improvement of Crash Compatibility between Cars" Contract Nº: RO – 97 – SC.1064
Abstract: The main aim of this working package -*Structural Survey of Cars*- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet. Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts. Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined. This report shows the methodology followed to get these measurements.
Subject terms: Crash compatibility, geometric compatibility, resistant elements, measure methodology
Date: March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

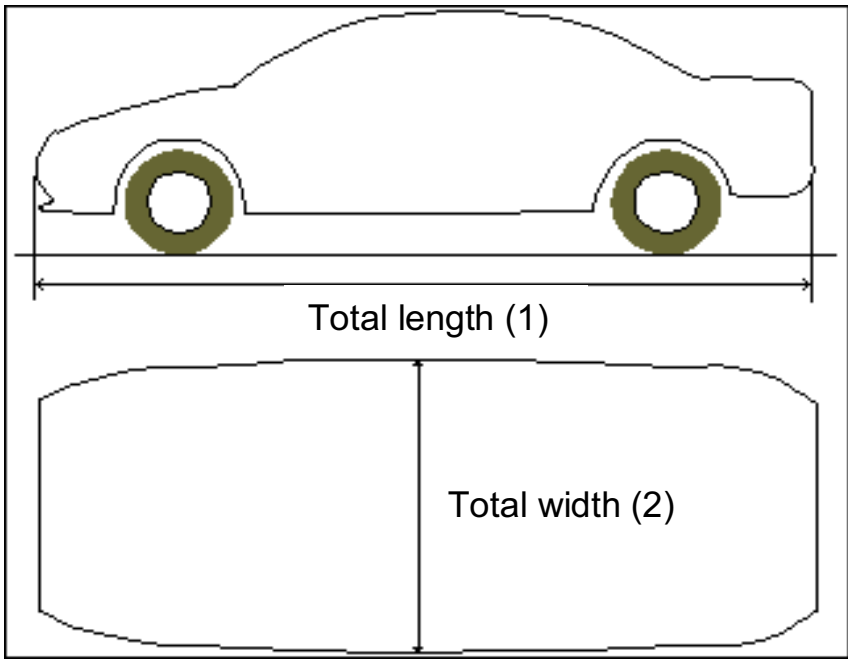


Figure 1.- Definition of the main resistant elements. General dimensions.

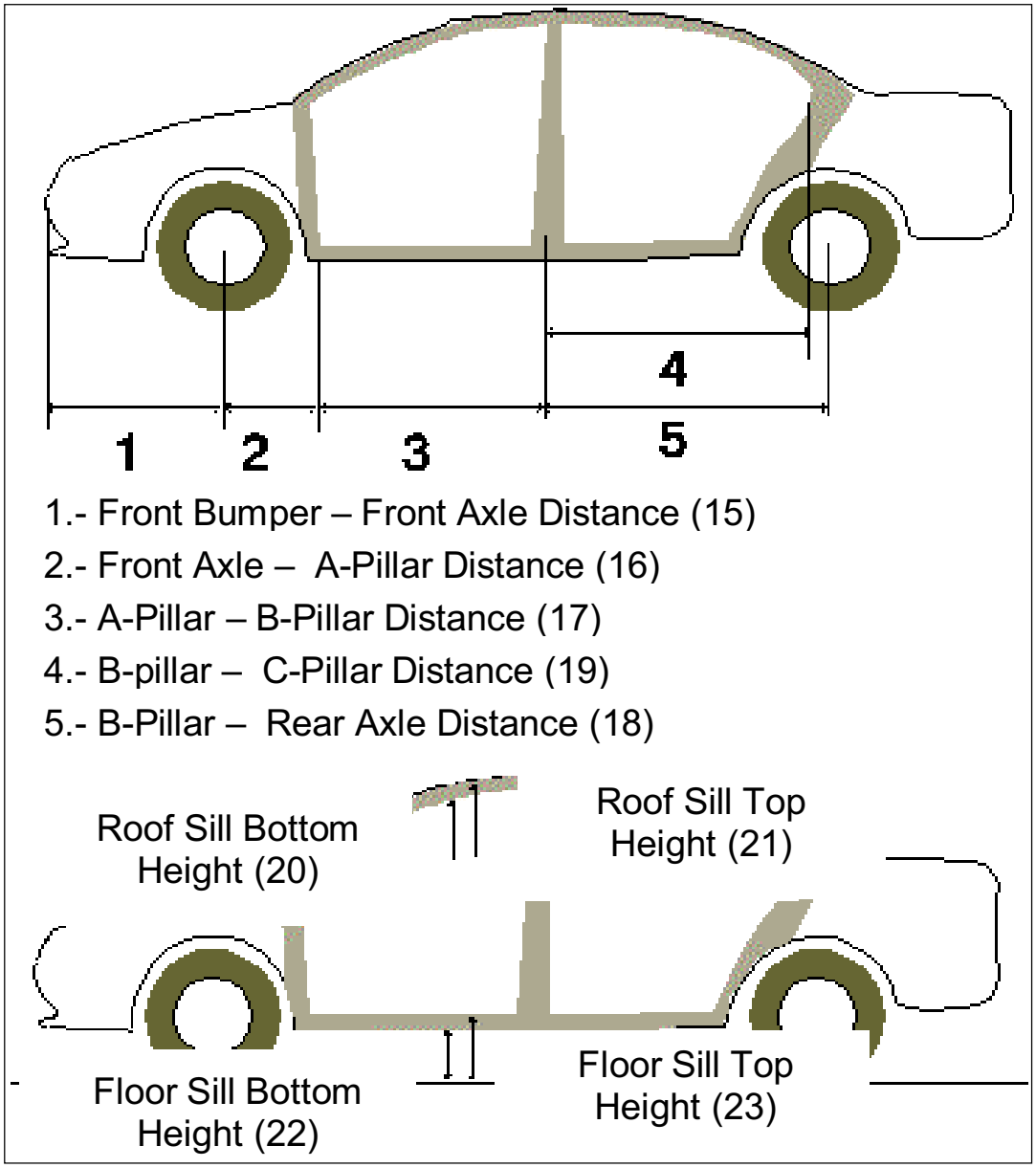


Figure 2.- Definition of the main resistant elements. Side elements.

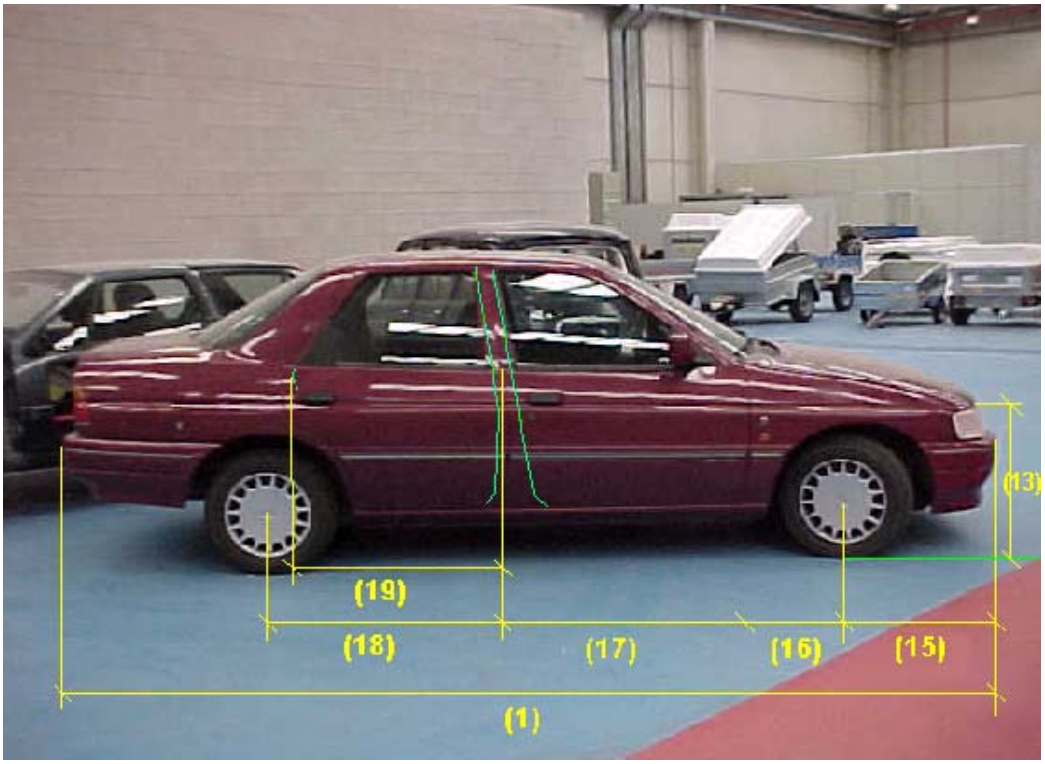


Figure 3.- Measurements of the side resistant elements (outer).

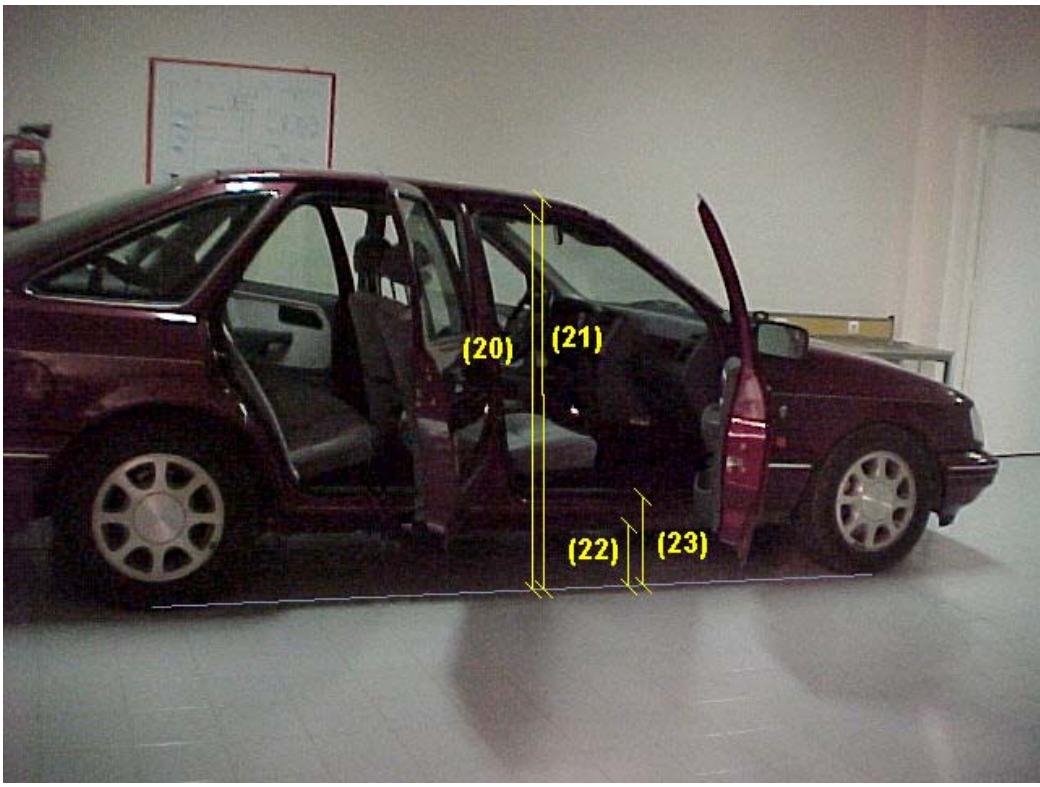


Figure 4.- Measurements of the side resistant elements (inner).

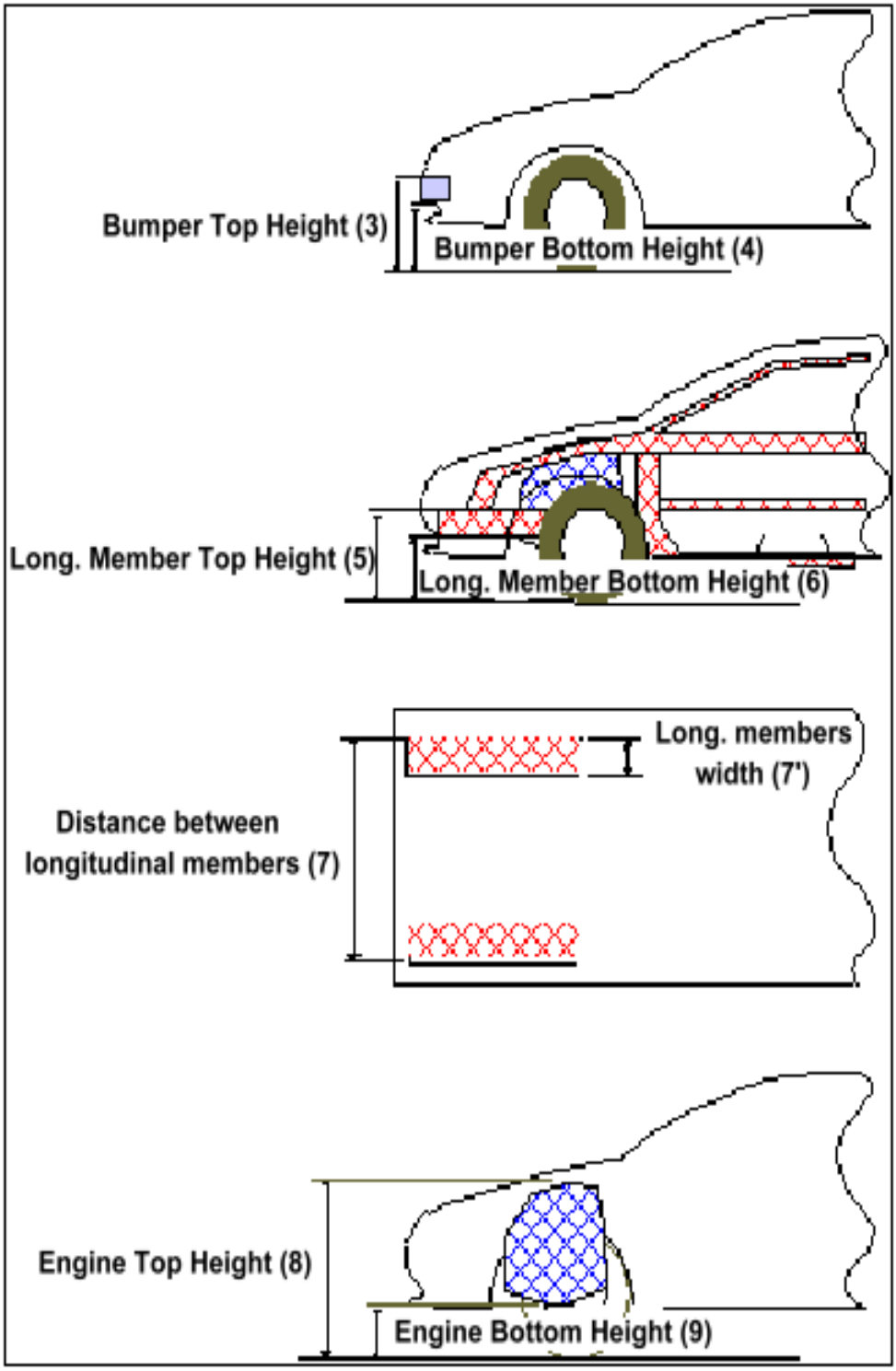


Figure 5.- Definition of the main resistant elements. Front elements.

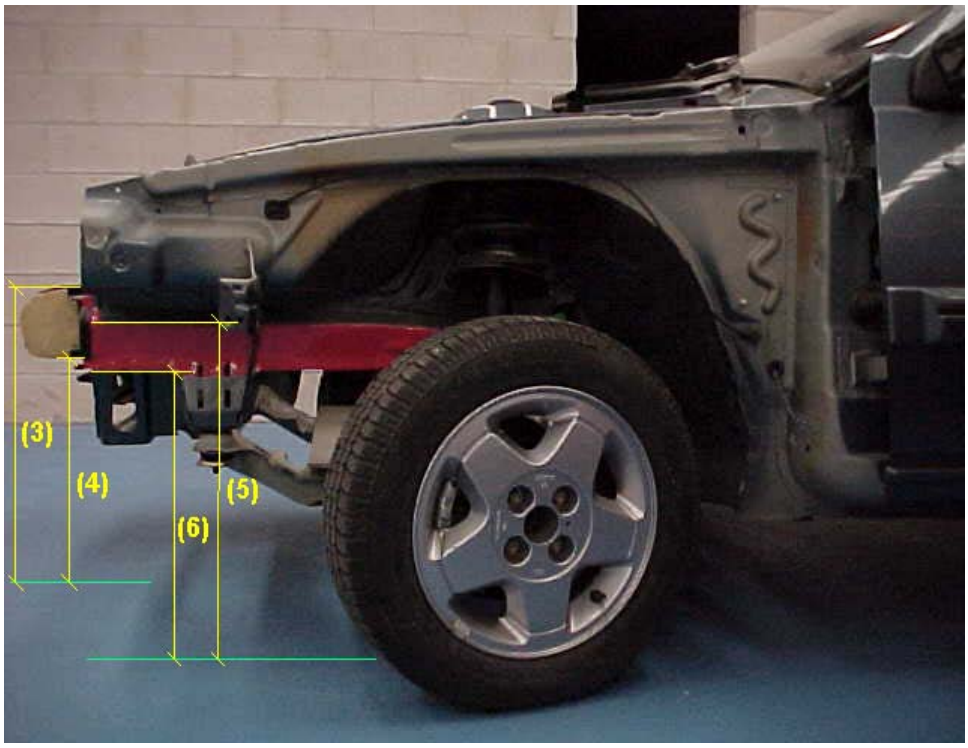


Figure 6.- Measurements of the main resistant elements. Front elements 1.

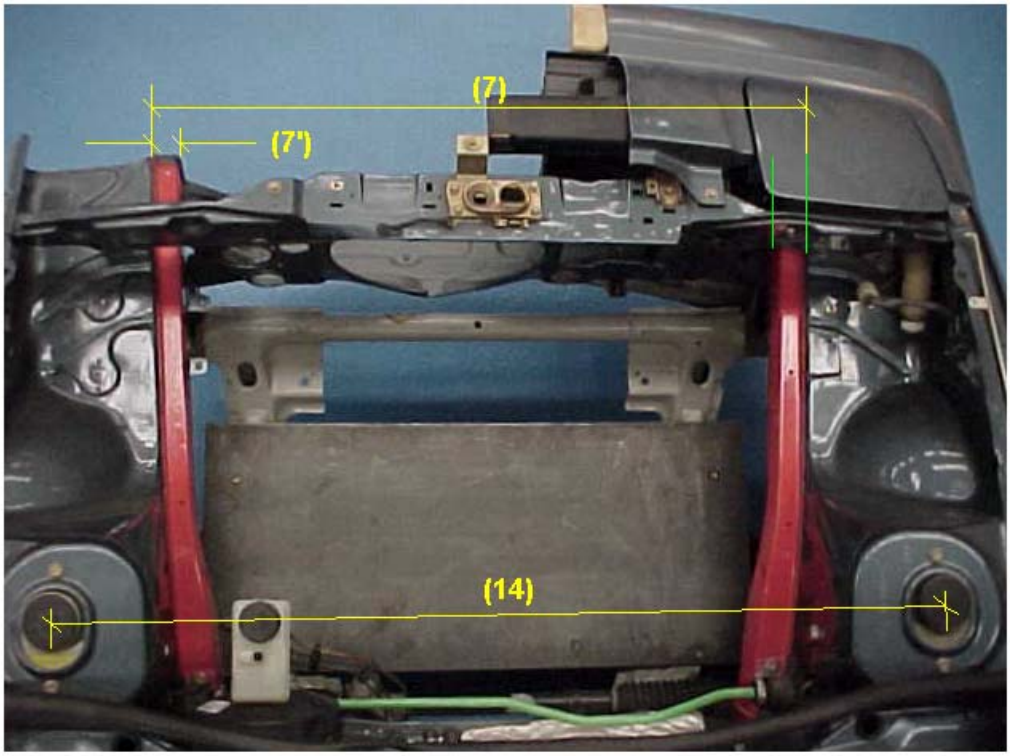


Figure 7.- Measurements of the main resistant elements. Front elements 2.

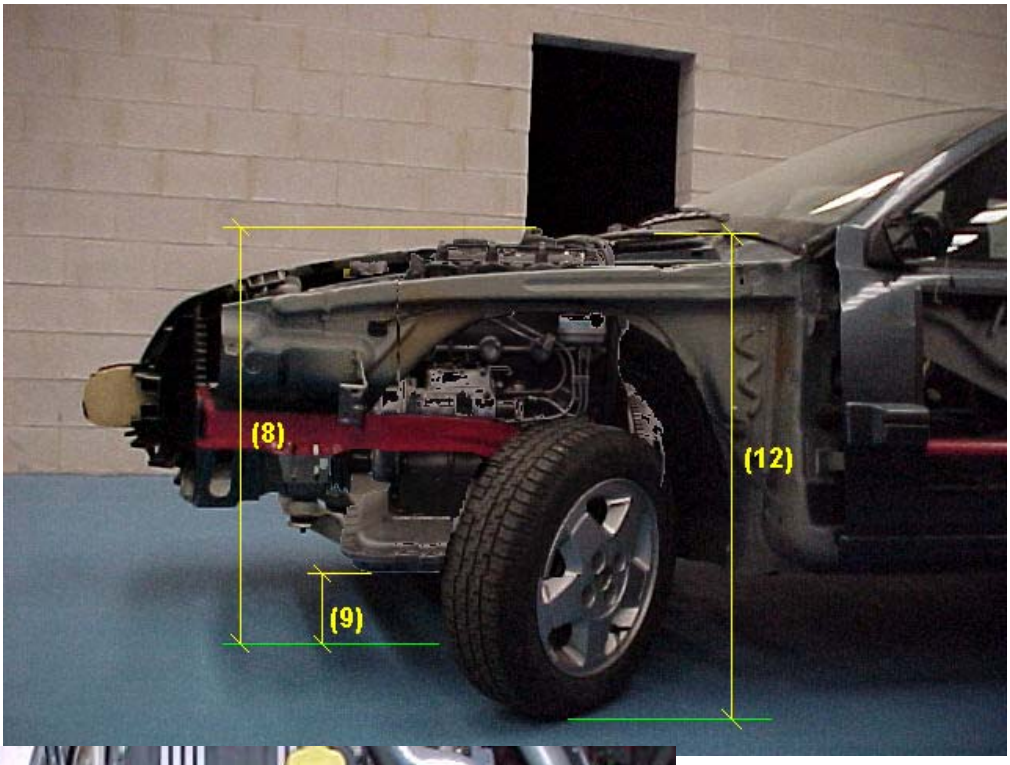


Figure 8.- Measurements of the main resistant elements. Front elements 3.

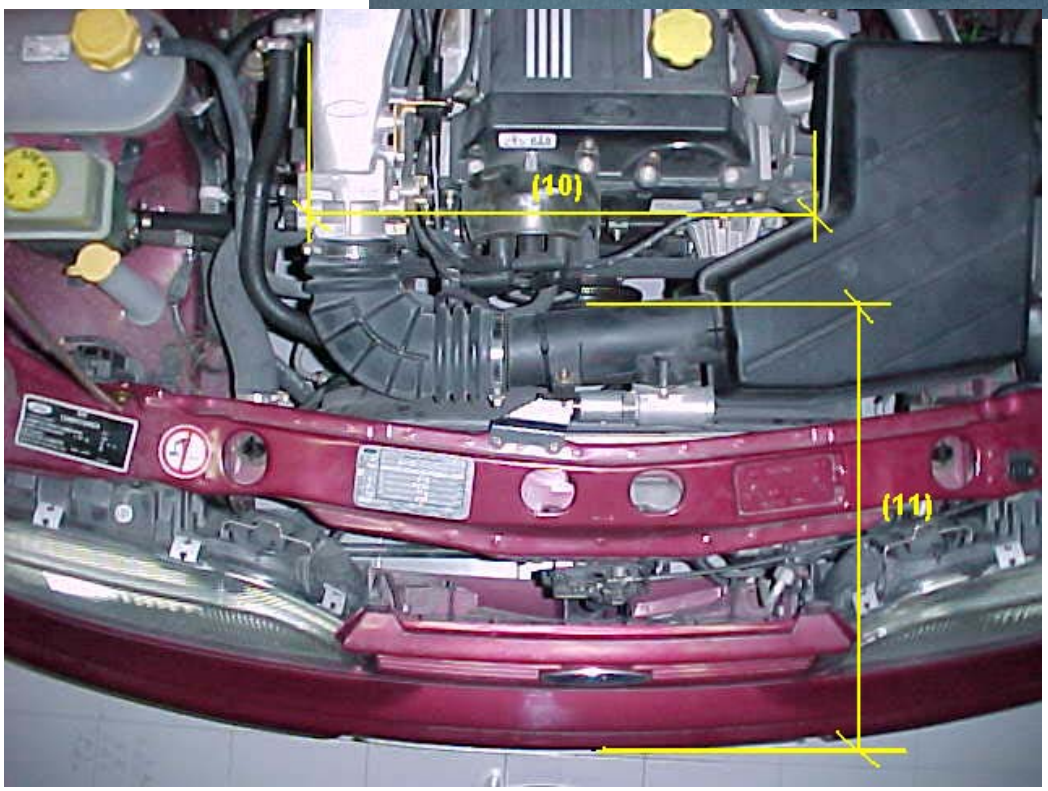


Figure 9.- Definition of the main resistant elements. Front elements (Longitudinal engine).

The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

• **Total Length –(1)- (Side & Front Sheets - C column)**: distance between the point in the front bumper further on and the point in the rear bumper further back.

• **Weight (Side & Front Sheets - D column)**: mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).

• **Total Width –(2)- (Side & Front Sheets - E column)**: distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).

• **Bumper bottom height –(4)- (Front Sheet G column)**: distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).

• **Bumper top height –(3)- (Front Sheet H column)**: distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).

• **Longitudinal member top height –(5)- (Front Sheet I column)**: distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).

• **Longitudinal member bottom height –(6)- (Front Sheet J column)**: distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

• **Distance between longitudinal members (Front Sheet K column)**: transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

• **Longitudinal member width -7'- (Front Sheet L column)**: width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

• **Engine top height (8) (Front Sheet N column)**: distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).

• **Engine bottom height (9) (Front Sheet M column)**: distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).

• **Engine and Gearbox width (10) (Front Sheet O & P columns)**:

- Transverse *configuration engine*: distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).

- *Longitudinal configuration engine*: distance between extreme points in the cylinder block unit (from a front point of view).

• **Front bumper - Engine distance (11) (Front Sheet Q column)**: distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.

• **Front shock absorber fixing width (14) (Front Sheet R column)**: transverse distance between the front shock absorber - body car joints.

• **Front shock absorber fixing height (12) (Front Sheet S column)**: distance between the ground and the front shock absorber-body car joint.

• **Bonnet leading edge height (Front Sheet T column)**: distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

• **Front bumper - Front axle distance (15) (Side Sheet G column)**: distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.

• **Front axle - A Pillar distance (16) (Side Sheet H column)**: distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.

• **A Pillar - B Pillar distance (17) (Side Sheet I column)**: distance between the point in the A-pillar further back and the middle point in the B-pillar.

• **B Pillar - C Pillar distance (19) (Side Sheet J column)**: distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).

• **B Pillar - Rear axle distance (18) (Side Sheet K column)**: distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.

• **Roof sill bottom height (20) (Side Sheet L column)**: distance between the ground and the lowest point on the roof sill, measured in the front door middle point.

• **Roof sill top height (21) (Side Sheet M column)**: distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.

• **Floor sill bottom height (22) (Side Sheet N column)**: distance between the ground and the lowest point on the floor sill, measured in the front door middle point.

• **Floor sill top height (23) (Side Sheet O column)**: distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.