

IMPORTANT NOTICE: Robert Bosch LLC and the manufacturers whose vehicles are accessible using the CDR System urge end users to use the latest production release of the Crash Data Retrieval system software when viewing, printing or exporting any retrieved data from within the CDR program. Using the latest version of the CDR software is the best way to ensure that retrieved data has been translated using the most current information provided by the manufacturers of the vehicles supported by this product.

CDR File Information

User Entered VIN	1FMHK8D81CGA03959
User	
Case Number	MC0204
EDR Data Imaging Date	11/29/2011
Crash Date	
Filename	1FMHK8D81CGA03959_ACM.CDRX
Saved on	Tuesday, November 29 2011 at 13:10:39
Collected with CDR version	Crash Data Retrieval Tool 4.2
Reported with CDR version	Crash Data Retrieval Tool 10.0
EDR Device Type	Airbag Control Module
ACM Adapter Detected During Download	Yes
Event(s) recovered	locked frontal event

Comments

No comments entered.

The retrieval of this data has been authorized by the vehicle's owner, or other legal authority such as a court order or search warrant, as indicated by the CDR tool user on Tuesday, November 29 2011 at 13:10:39.

Data Limitations

Restraints Control Module Recorded Crash Events:

Deployment Events cannot be overwritten or cleared from the Restraints Control Module (RCM). Once the RCM has deployed any airbag device, the RCM must be replaced. The data from events which did not qualify as deployable events can be overwritten by subsequent events. The RCM can store up to two deployment events.

Airbag Module Data Limitations:

- Restraints Control Module Recorded Vehicle Forward Velocity Change reflects the change in forward velocity that the sensing system experienced from the point of algorithm wake up. It is not the speed the vehicle was traveling before the event. Note that the vehicle speed is recorded separately five seconds prior to algorithm wake up. This data should be examined in conjunction with other available physical evidence from the vehicle and scene when assessing occupant or vehicle forward velocity change.
- Event Recording Complete will indicate if data from the recorded event has been fully written to the RCM memory or if it has been interrupted and not fully written.
- If power to the Airbag Module is lost during a crash event, all or part of the crash record may not be recorded.
- For 2011 Ford Mustangs, the Steering Wheel Angle parameter indicates the change in steering wheel angle from the previously recorded sample value and does not represent the actual steering wheel position.

Airbag Module Data Sources:

- Event recorded data are collected either INTERNALLY or EXTERNALLY to the RCM.
 - INTERNAL DATA is measured, calculated, and stored internally, sensors external to the RCM include the following:
 - > The Driver and Passenger Belt Switch Circuits are wired directly to the RCM.
 - > The Driver's Seat Track Position Switch Circuit is wired directly to the RCM.
 - > The Side Impact Sensors (if equipped) are located on the side of vehicle and are wired directly to the RCM.
 - > The Occupant Classification Sensor is located in the front passenger seat and transmits data directly to the RCM on high-speed CAN bus.
 - > Front Impact Sensors (right and left) are located at the front of vehicle and are wire directly to the RCM.
 - EXTERNAL DATA recorded by the RCM are data collected from the vehicle communication network from various sources such as Powertrain Control Module, Brake Module, etc.

02007_RCM-RC6_r002

System Status at Time of Retrieval

VIN as programmed into RCM at factory	1FMHK8D81CGA03959
Current VIN from PCM	1FMHK8D81CGA03959
Ignition cycle, download (first record)	141
Ignition cycle, download (second record)	N/A
Restraints Control Module Part Number	BB5T-14B321-AH
Restraints Control Module Serial Number	3107790100000000
Restraints Control Module Software Part Number (Version)	BB5T-14C028-AD
Left/Center Frontal Restraints Sensor Serial Number	146DB7AB
Left Side Restraint Sensor 1 Serial Number	8502200000000000000000
Left Side Restraint Sensor 2 Serial Number	14996C7F
Right Frontal Restraints Sensor Serial Number	1499BA10
Right Side Restraint Sensor 1 Serial Number	89B03D22
Right Side Restraints Sensor 2 Serial Number	1499A958

System Status at Event (First Record)

Recording Status	Locked Record
Complete file recorded (yes,no)	Yes
Multi-event, number of events (1,2)	1
Time from event 1 to 2 (msec)	N/A
Lifetime Operating Timer at event time zero (seconds)	57,425
Key-on Timer at event time zero (seconds)	220
Vehicle voltage at time zero (Volts)	12.312
Energy Reserve Mode entered during event (Y/N)	Yes
Time Driver Front Satellite Sensor Lost Relative to Time Zero (msec)	178.5
Time Passenger Front Satellite Sensor Lost Relative to Time Zero (msec)	178.5
Time Driver First Row Satellite Sensor Lost Relative to Time Zero (msec)	178.5
Time Passenger Second Row Satellite Sensor Lost Relative to Time Zero (msec)	178.5

Faults Present at Start of Event (First Record)

No Faults Recorded

Deployment Data (First Record)

Frontal airbag deployment, time to first stage deployment, driver (msec)	4.5
Frontal airbag deployment, time to 2nd stage, driver (msec)	14.5
Pretensioner (retractor) deployment, time to fire, driver (msec)	3.5
Frontal airbag deployment, time to first stage deployment, front passenger (msec)	4.5
Frontal airbag deployment, time to 2nd stage, front passenger (msec)	14.5
Pretensioner (retractor) deployment, time to fire, right front passenger (msec)	3.5
Adaptive Load Limiter deployment, time to fire, passenger (msec)	13.5
Pretensioner (buckle) deployment, time to fire, driver (msec)	8.5
Pretensioner (buckle) deployment, time to fire, right front passenger (msec)	8.5
Maximum delta-V, longitudinal (MPH [km/h])	-37.90 [-60.99]
Time, maximum delta-V longitudinal (msec)	110
Maximum delta-V, lateral (MPH [km/h])	-1.75 [-2.82]
Time, maximum delta-V lateral (msec)	37
Left or center front, satellite Sensor discriminating deployment	Yes
Left or center, front satellite Sensor safing	Yes
Right, front satellite sensor discriminating deployment	Yes
Right, front satellite sensor safing	Yes
RCM, front sensor discriminating deployment	Yes
RCM, front sensor safing	Yes
Longitudinal Delta-V Time Zero Offset	0.5 ms
Lateral Delta-V Time Zero Offset	0.5 ms
Roll Angle Time Zero Offset	40.5 ms

Pre-Crash Data -1 sec (First Record)

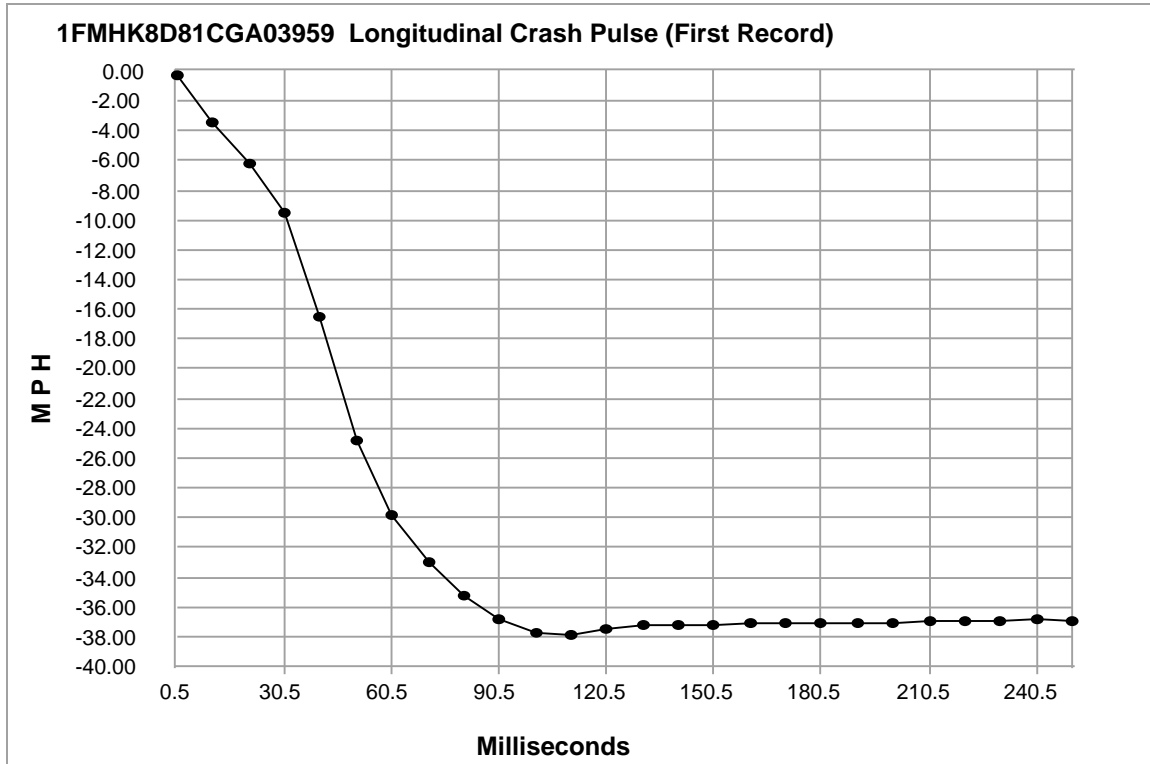
Ignition cycle, crash	139
Frontal air bag warning lamp, on/off	Off
Occupant size classification, front passenger (Child size Yes/No [Hex value])	No [\$08]
Safety belt status, driver	Driver Buckled
Seat track position switch, foremost, status, driver	Not Forward
Safety belt status, front passenger	Passenger Buckled
Seat track position switch, foremost, status, front passenger	Forward
Brake Telltale	Off
ABS Telltale	Off
ESC/TC Telltale	Off
ESC/TC Off Telltale	Mode 1
Powertrain Wrench Telltale	Off
Speed Control Telltale	Off
MIL Telltale	On

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

Times (sec)	Speed vehicle indicated MPH [km/h]	Accelerator pedal, % full	Service brake, on/off	Engine RPM	ABS activity (engaged, non-engaged)	Brake Powertrain Torque Request	Driver Gear Selection	Traction Control via Brakes	Wheel Torque
- 5.0	34 [55]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 4.5	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 4.0	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,216
- 3.5	34 [55]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 3.0	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 2.5	34 [55]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 2.0	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 1.5	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 1.0	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212
- 0.5	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,216
0.0	35 [56]	0.0	Off	0	non-engaged	No	Neutral	non-engaged	4,212

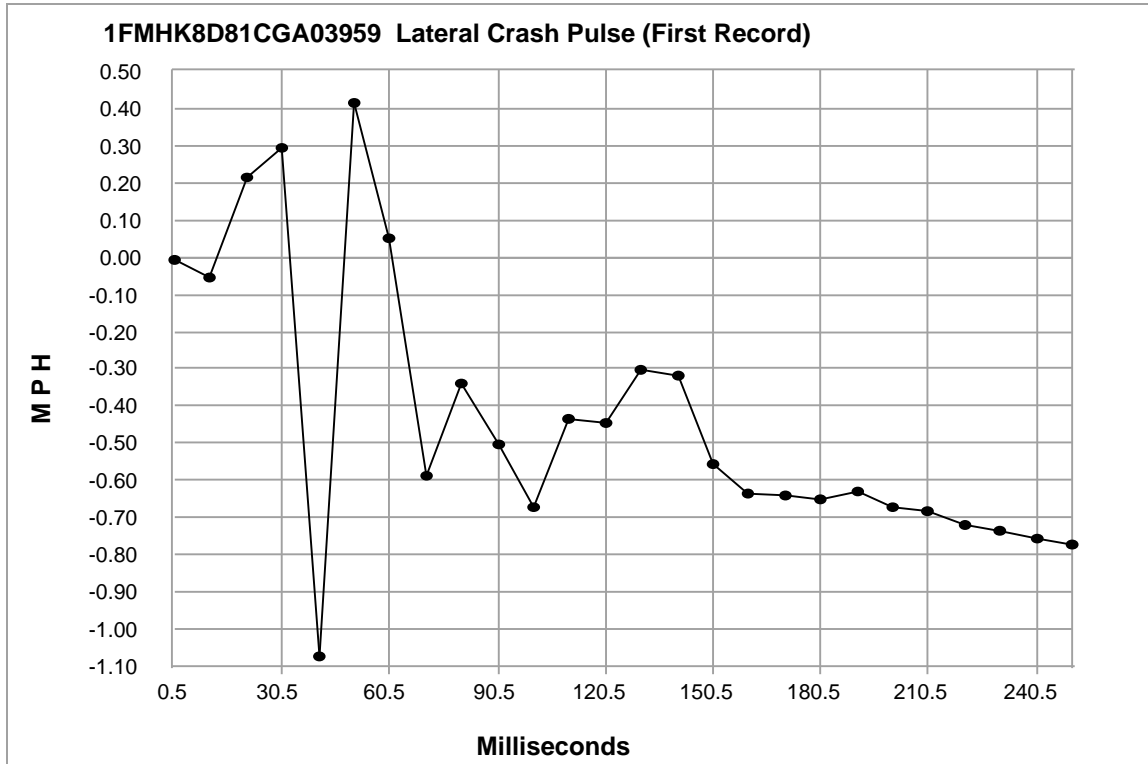
Pre-Crash Data -5 to 0 sec [10 samples/sec] (First Record)

Times (sec)	Steering Wheel Angle (degrees)	Stability Control Lateral Acceleration (g)	Stability Control Longitudinal Acceleration (g)	Stability Control Yaw Rate (deg/sec)	Stability Control Roll Rate (deg/sec)
- 5.0	0.3	-0.032	0.059	-0.25	1.25
- 4.9	0.0	-0.008	0.029	-0.12	-0.75
- 4.8	-0.1	-0.028	0.009	-0.37	1.37
- 4.7	0.0	0.004	0.019	0.0	-2.0
- 4.6	0.0	-0.013	0.004	0.0	0.75
- 4.5	-0.1	-0.009	0.0	-0.37	0.87
- 4.4	0.0	0.021	0.0	0.37	0.75
- 4.3	0.0	-0.009	-0.016	0.0	2.87
- 4.2	0.0	-0.021	-0.018	0.12	3.62
- 4.1	0.0	0.014	-0.008	0.25	2.75
- 4.0	0.2	0.028	-0.026	0.37	-0.25
- 3.9	0.0	0.12	-0.018	0.5	-1.25
- 3.8	0.0	0.069	-0.057	0.0	-3.12
- 3.7	0.0	-0.006	-0.018	-0.25	-0.12
- 3.6	0.0	-0.053	-0.018	0.12	3.12
- 3.5	0.3	-0.037	-0.042	0.25	5.75
- 3.4	0.3	0.001	-0.018	0.5	2.12
- 3.3	-0.4	-0.016	-0.005	-0.25	1.37
- 3.2	-0.4	0.025	0.0	-0.25	-1.5
- 3.1	-0.4	0.004	0.022	-0.37	-3.37
- 3.0	-0.4	-0.037	0.0	-0.37	-1.0
- 2.9	-0.1	-0.008	0.002	0.0	0.0
- 2.8	0.0	-0.046	0.002	-0.75	4.25
- 2.7	0.0	-0.008	0.0	0.25	1.62
- 2.6	-0.3	0.028	-0.003	0.0	3.62
- 2.5	0.0	0.021	-0.01	0.12	3.25
- 2.4	-0.2	0.029	-0.038	0.0	-0.37
- 2.3	-0.3	0.076	-0.05	0.25	-1.75
- 2.2	0.0	0.057	-0.005	0.62	-3.37
- 2.1	0.0	0.048	0.0	0.87	-3.0
- 2.0	0.4	0.001	-0.038	0.75	0.62
- 1.9	0.5	-0.019	-0.008	0.12	0.87
- 1.8	0.5	-0.029	0.0	0.12	1.5
- 1.7	0.4	-0.01	-0.016	-0.12	0.0
- 1.6	0.4	0.009	-0.018	0.0	0.62
- 1.5	0.0	0.012	0.0	-0.5	-1.37
- 1.4	0.3	-0.06	0.017	-0.25	2.75
- 1.3	0.0	-0.005	0.0	-0.37	1.0
- 1.2	0.1	0.0	0.017	-1.12	3.12
- 1.1	-0.1	-0.04	0.0	0.12	0.5
- 1.0	-0.1	0.008	-0.003	0.0	1.62
- 0.9	0.0	-0.016	0.019	-0.25	0.37
- 0.8	0.0	0.004	0.0	0.5	0.87
- 0.7	0.0	0.001	0.009	0.5	1.62
- 0.6	0.0	0.02	-0.038	0.87	-0.5
- 0.5	0.0	0.044	-0.045	0.37	0.37
- 0.4	0.0	-0.032	-0.005	0.75	0.87
- 0.3	-0.1	-0.009	-0.003	0.25	-3.37
- 0.2	0.0	-0.026	-0.041	0.0	0.25
- 0.1	0.0	-0.063	-0.038	-0.5	0.12
0.0	0.0	-0.047	0.039	-0.87	2.37



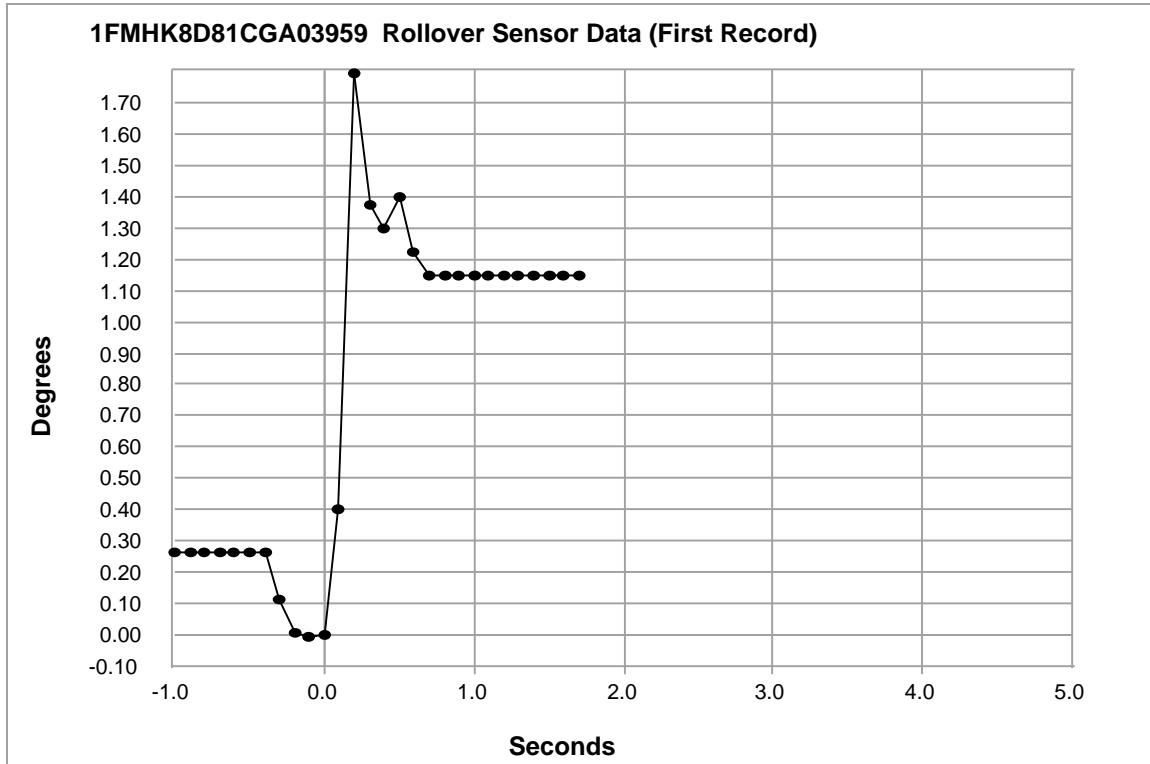
Longitudinal Crash Pulse (First Record)

Time (msec)	Delta-V, longitudinal (MPH)	Delta-V, longitudinal (km/h)
0.5	-0.23	-0.37
10.5	-3.38	-5.44
20.5	-6.26	-10.07
30.5	-9.53	-15.34
40.5	-16.55	-26.63
50.5	-24.77	-39.86
60.5	-29.86	-48.05
70.5	-33.00	-53.11
80.5	-35.22	-56.67
90.5	-36.84	-59.28
100.5	-37.77	-60.78
110.5	-37.89	-60.98
120.5	-37.48	-60.32
130.5	-37.23	-59.91
140.5	-37.29	-60.02
150.5	-37.20	-59.86
160.5	-37.03	-59.60
170.5	-37.06	-59.64
180.5	-37.04	-59.61
190.5	-37.09	-59.69
200.5	-37.06	-59.65
210.5	-37.01	-59.56
220.5	-37.01	-59.55
230.5	-36.90	-59.39
240.5	-36.88	-59.35
250.5	-36.94	-59.45



Lateral Crash Pulse (First Record)

Time (msec)	Delta-V, lateral (MPH)	Delta-V, lateral (km/h)
0.5	0.00	-0.01
10.5	-0.06	-0.09
20.5	0.21	0.35
30.5	0.29	0.47
40.5	-1.07	-1.73
50.5	0.41	0.67
60.5	0.05	0.08
70.5	-0.59	-0.94
80.5	-0.34	-0.55
90.5	-0.50	-0.81
100.5	-0.67	-1.08
110.5	-0.44	-0.70
120.5	-0.44	-0.71
130.5	-0.30	-0.49
140.5	-0.32	-0.51
150.5	-0.56	-0.90
160.5	-0.63	-1.02
170.5	-0.64	-1.03
180.5	-0.65	-1.05
190.5	-0.63	-1.01
200.5	-0.67	-1.08
210.5	-0.68	-1.10
220.5	-0.72	-1.16
230.5	-0.74	-1.18
240.5	-0.76	-1.22
250.5	-0.78	-1.25



Rollover Sensor Data (First Record)

Time (sec)	Vehicle roll angle (degrees)
-1.0	0.27
-0.9	0.27
-0.8	0.27
-0.7	0.27
-0.6	0.27
-0.5	0.26
-0.4	0.26
-0.3	0.11
-0.2	0.01
-0.1	0.00
0.0	0.00
0.1	0.40
0.2	1.79
0.3	1.38
0.4	1.30
0.5	1.40
0.6	1.22
0.7	1.15
0.8	1.15
0.9	1.15
1.0	1.15

Time (sec)	Vehicle roll angle (degrees)
1.1	1.15
1.2	1.15
1.3	1.15
1.4	1.15
1.5	1.15
1.6	1.15
1.7	1.15
1.8	N/A
1.9	N/A
2.0	N/A
2.1	N/A
2.2	N/A
2.3	N/A
2.4	N/A
2.5	N/A
2.6	N/A
2.7	N/A
2.8	N/A
2.9	N/A
3.0	N/A
3.1	N/A

Time (sec)	Vehicle roll angle (degrees)
3.2	N/A
3.3	N/A
3.4	N/A
3.5	N/A
3.6	N/A
3.7	N/A
3.8	N/A
3.9	N/A
4.0	N/A
4.1	N/A
4.2	N/A
4.3	N/A
4.4	N/A
4.5	N/A
4.6	N/A
4.7	N/A
4.8	N/A
4.9	N/A
5.0	N/A

Hexadecimal Data

Data that the vehicle manufacturer has specified for data retrieval is shown in the hexadecimal data section of the CDR report. The hexadecimal data section of the CDR report may contain data that is not translated by the CDR program. The control module contains additional data that is not retrievable by the CDR system.

02 00 00 00

42 42 35 54 2D 31 34 42 33 32 31 2D 41 48 00 00 00 00 00 00 00 00 00 00

33 31 30 37 37 39 30 31 30 30 30 30 30 30 30

42 42 35 54 2D 31 34 43 30 32 38 2D 41 44 00 00 00 00 00 00 00 00 00 00

14 6D B7 AB 00 00 00 00 00 00 00 00 00 00 00

85 02 2D 22 00 00 00 00 00 00 00 00 00 00 00

14 99 6C 7F 00 00 00 00 00 00 00 00 00 00 00

14 99 BA 10 00 00 00 00 00 00 00 00 00 00 00

89 B0 3D 22 00 00 00 00 00 00 00 00 00 00 00

14 99 A9 58 00 00 00 00 00 00 00 00 00 00 00

31 46 4D 48 4B 38 44 38 31 43 47 41 30 33 39 35 39

31 46 4D 48 4B 38 44 38 31 43 47 41 30 33 39 35 39 00 00 00 00 00 00 00

Event Record 1

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6E 9C 03 00 03 B9 03 00 B6 CA 03 00 A9 D5 03 00 5A DD 03 00 FC E2 03 00 3B E6
03 00 A7 E6 03 00 3B E5 03 00 58 E4 03 00 94 E4 03 00 3D E4 03 00 AC E3 03 00
C5 E3 03 00 B5 E3 03 00 DC E3 03 00 C7 E3 03 00 96 E3 03 00 94 E3 03 00 38 E3
03 00 24 E3 03 00 59 E3 03 00 54 C8 FC FF 26 C8 FC FF 17 C9 FC FF 5E C9 FC FF
9D C4 FC FF C9 C9 FC FF 87 C8 FC FF 4F C6 FC FF 29 C7 FC FF 98 C6 FC FF 00 C6
FC FF D3 C6 FC FF CD C6 FC FF 49 C7 FC FF 3D C7 FC FF 67 C6 FC FF 24 C6 FC FF
20 C6 FC FF 15 C6 FC FF 28 C6 FC FF 00 C6 FC FF F7 C5 FC FF D8 C5 FC FF C9 C5
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7D FB 7D FB 3A FB 3C FB 3C FB 45 FB 47 FB 46 FB 46 FB 46 FB 46 FB 45 FB 42 FB
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BE FD BE FD BE FD BE FD BE FD BE FD BE FD BE FD BE FD BE FD BE FD BE FD
09 FE 6D FD 3D FD 40 FD D7 FD 0F FE 0F FE E8 FD 47 FD F1 FC DC FC 0C FD 4B FD
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A3 07 CB 07 CD 07 A7 07 AA 07 F7 07 0B 08 ED 07 D9 07 E3 07 D4 07 D0 07 D0 07
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05 46 69 46 50 46 5C 46 50 46 69 46 8E 46 A7 46 9B 46 5C 46 C6 75 30 75 6E 75
A7 74 43 76 94 75 68 76 62 75 D2 75 55 75 87 75 D2 75 FE 74 55 75 87 75 DF 73
49 75 3C 75 1D 76 AD 75 E5 74 B9 75 68 74 7B 75 87 75 7B 75 4F 76 9A 76 43 76
17 75 B3 74 F8 73 24 75 68 76 6F 77 04 76 B9 75 9A 74 DF 73 C8 74 30 75 D9 76
D2 75 9A 76 75 76 0B 75 81 74 DF 73 04 74 6E 75 87 75 09 00 09 00 07 00 07 00
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00 00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 65 01 FF FF 65 01 65 01
FF FF FF FF 65 01 65 01 FF FF 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF DC 00 4A 00 00 0E 00 0E 01 00
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10 00 00 00 00 00 84 1E 00 00 00 02 00 04 5A C6 92 15 D6 00 00 00 00 00
84 1D 00 00 02 00 04 5A C6 92 15 E4 00 00 00 00 00 84 1D 00 00 00 02 00
04 5A C6 9E 15 DA 00 00 00 00 84 1D 00 00 02 00 04 5A C6 9E 15 E7 00
00 00 00 00 84 1D 00 00 00 02 00 04 5A C6 9E 15 E7 00 00 00 00 84 1D
00 00 00 02 00 00 00 00 00 00 14 09 00 00 00 00 00 00 00 14 09 00 00 00
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