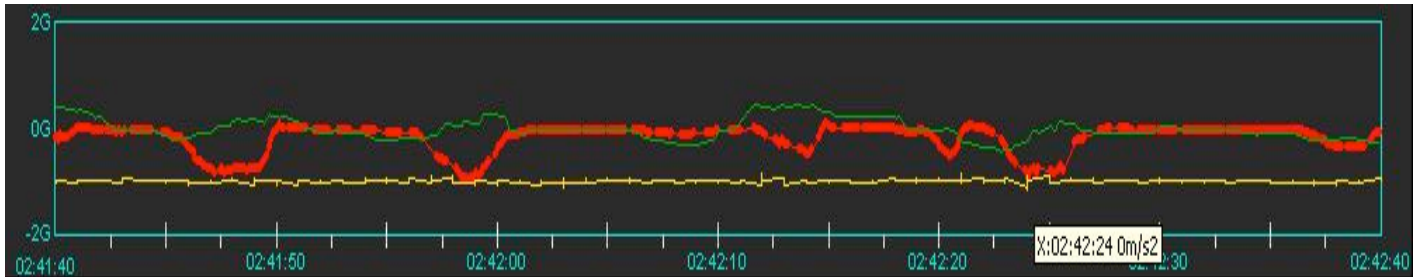




## What Dangerous Driving Behavior Looks Like

(Before an accident, when there is still time to prevent loss of life & property)



### Dangerous Driving Behaviors include:

- High Speed Turns
- Hard Braking & Tailgating
- Racing & Rapid Accelerations
- Impact to Vehicle, Object or Crash
- Distracted Driving & Texting While Driving
- Erratic Lane Changes & Inability to Maintain Lane

### What is an Accelerometer?

An accelerometer is an electromechanical device that will measure acceleration & gravity forces. These forces may be static, like the constant force of gravity, or they could be dynamic - caused by moving the accelerometer. By measuring the amount of dynamic acceleration, you can analyze the way the device is moving, as well as inertia experienced in 3 different axes.



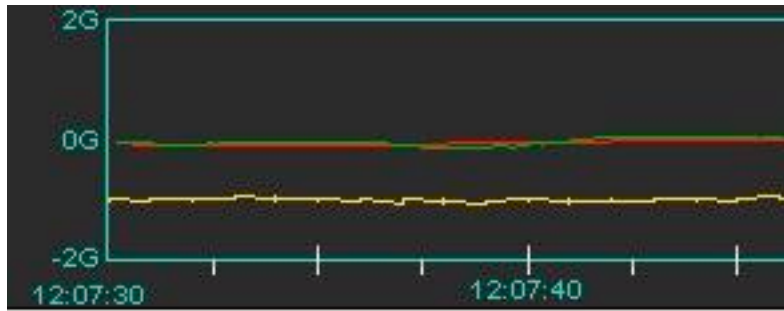
### Accelerometer Charting for "X" , "Y" & "Z"

Accelerometers for vehicles are typically set-up with 3 different inertia measurements:

"X" for acceleration & deceleration inertia fluctuations (Forward & Reverse)

"Y" for lateral inertia fluctuations, (Left & Right)

"Z" for gravity inertia fluctuations (Up & Down)



*When the vehicle is static or "at rest" the lines will be nearly horizontal or charted in a straight line, with no deflection or charted deviation. Note the Z-axis charting is not at "0" as the vehicle is subject to gravity so there is a built in baseline at "1G" as long as the vehicle remains on planet Earth, caused by the forces of Earth's gravity thus a permanent deflection baseline.*

### **Understanding G-Sensor Charting**

Wide chart deflections can indicate dangerous driving behaviors that may indicate a need for additional fleet driver risk management oversight by supervisors or in some cases management intervention in order to prevent those recorded and identified as dangerous driving behaviors from creating a potential threat to life and limb, risk of capital investment in assets or liability lawsuits.

Distracted fleet drivers, for example, often display hard braking as they are often not paying attention to the vehicle in front of them until they are about to hit it, hence the cause for the hard braking.

Basic Charting terminology:

G- is a unit of acceleration equal to Earth's gravity at sea level

X- axis is the acceleration forces upon the vehicle (Forward & Backward)

Y- axis is the lateral forces upon the vehicle (Left & Right)

Z- axis is the force of Gravity upon the vehicle (Up & Down)

Deflections- are the variance or deviation from a straight line as displayed on the chart

Baseline- is the axis chart line when the vehicle is at rest, displayed as a straight line on the chart

Spike- is the maximum chart deflection possible on the 2 "G" deflection chart

Acceleration- is the slope of velocity versus time on a linear chart

Inertia- is the resistance of any physical object to a change in its state of motion

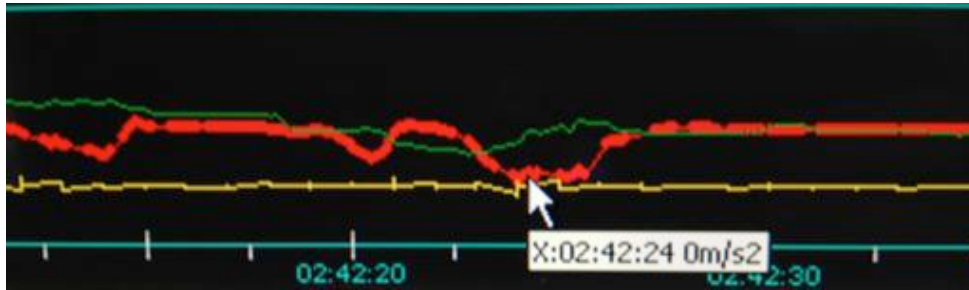
### **Fleet Driver Safety & Fleet Driver Risk Management**

G-Sensor charting with wide deflections (increases or decreases in inertia) may indicate dangerous driving behaviors, and a pattern of these behaviors if left unchecked, greatly increases the risk of vehicle related fatalities, accidents and liability.

Fleet driver risk management is enhanced when clear indications of dangerous driving behaviors can be identified prior to the accident scene reconstruction when it is already too late.

Fleet Driver Risk Management as well as Driver Safety Training of specialty vehicles like buses, trucks, concrete transports, fuel trucks addresses the fact many not them are top heavy, lateral inertia of even .6G can be dangerous, and incidents of this may be cause for concern and immediate attention to prevent loss of control, or possible rollover beyond the .6G threshold. Safe Driver Training Systems like the SD4mX can alert the drivers of their potentially dangerous vehicle operations w/o any need for supervisor or management review or discussion. Active alerts when they exceed safety thresholds of vehicle operation can immediately let a distracted driver know they are not in control of their vehicle before any review is performed on any documented events.

In general under normal operating conditions, driving g-sensor charting should be represented by 3 different color charted lines near level or straight, with gradual slight deflections as the vehicle is accelerated, navigates turns and slowly applies the brakes. Any large potholes or speed bumps should be encountered at lower speeds so as to not adversely affect the vehicle or provide extreme forces that might cause the driver to lose control. When charting axis deflections are far from straight lines it is an indication that something is wrong, and driving behaviors or other influence may have caused a potentially dangerous operation of the vehicle during normal driving navigation.

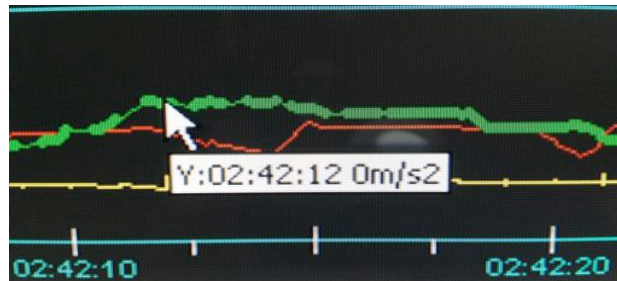


*"X" axis chart deflections can indicate rapid acceleration and hard braking*

*Hard Braking is an indication that the driver may be distracted and possible "Texting While Driving" as their attention is diverted from their primary function of safe vehicle navigation.*

*Tailgating can be an indication of aggressive driving behaviors where a driver intentionally follows too closely increasing the chance of inability to stop should the followed vehicle suddenly hit the brakes.*

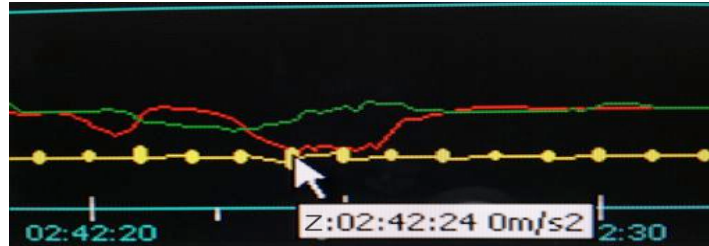
*Racing & Rapid Accelerations may indicate aggressive driving behaviors as well as employees with anger issues intent on taking it out on the company vehicles. Impact to Vehicle, Object or Crash*



*"Y" axis chart deflections can indicate high-speed hard turns, erratic lane changes and failure to maintain lane that cause vehicles to lean hard to their sides.*

*High Speed Turns can cause vehicles with a high center of gravity to flip or roll over endangering driver /passenger lives and damaging property.*

*Distracted Driving & Texting While Driving can cause frequent erratic lane changes as well as hard braking when they realize they are about to run into the vehicle in front of them. "Texting while driving" lawsuit settlements have been as high as \$49,000,000, so it is imperative drivers activities are documented and if caught "texting while driving" they are penalized to insure this dangerous driving behavior is not permitted to cause loss of life, damage to property or expose the company to liability lawsuits. Erratic Lane Changes or Inability to Maintain Lane may be indications of driver fatigue, where they are having problems staying awake and focused.*



*"Z" axis deflections can indicate sudden changes in up or down inertia, that can be caused by hitting large potholes, running over curbs or running over speed bumps at a high rate of speed. Anything that will cause the vehicle to drop down or bounce up will be reflected on the "Z" axis charting. Common problems include; school bus drivers who do not slow down for the speed bumps at schools and hit them at unsafe speeds, tractor trailer drivers who routinely run over curbs and storm drains causing damage to trailer tires as well as often crushing storm drains and property involved.*

## Driving While Texting (DWT) Epidemic

DWT is an acronym for "Driving While Texting" and what began as a infrequent concern for Fleet Directors or company management has become a full blown epidemic of Fleet Driver Risk with Multi-Million dollar settlements already awarded for the reckless loss or life or property due to this disabling driver behavior.

At this moment how many fleet drivers are engaging in known, proven dangerous activities while driving company vehicles, that are:

- Endangering their lives and the lives of others
- Endangering the damage or loss of your companies vehicle
- Jeopardizing the loss of multi-Million dollar settlements
- Tarnishing your company reputation in the market or community

***Your Fleet Drivers Are 23 Times More At Risk*** From a study conducted by the Virginia Tech Transportation Institute (VTTI):

- A truck driver texting while driving is 23.2 times more likely to get into an accident than a trucker paying full attention to the road.
- A truck driver dialing a cell is 5.9 times more likely to crash.
- A trucker reaching for a phone or other device is 6.7 times more likely to experience a truck accident.

For every 6 seconds of drive time, a driver sending or receiving a text message spends 4.6 of those seconds with their eyes off the road. This makes texting the most distracting of all cell phone related tasks. ***"In 2002, the Harvard Center for Risk Analysis calculated that 2,600 people die each year as a result of using cell phones while driving. They estimated that another 330,000 are injured."***

***Failure To Act Penalties are Staggering*** Private fleets are facing a Tsunami of risk and the potential losses in capital, assets and much higher fleet insurance costs could amount to a metaphorical tidal wave that could wipe out company profits if a manageable mechanism is not incorporated to help reduce the incidence of this dangerous driving behavior, and proper management oversight is not in place ASAP.

***\$49 Million dollars awarded In Trucking Accident Involving Texting*** How many companies can suffer the loss of \$49,000,000.00 without serious damage to their structure or core? Most small to medium sized companies will be wiped out or bankrupted with a single settlement of this magnitude. There are low cost alternative to multimillion-dollar liability lawsuits, which will help them enforce the current laws and provide substantial management oversight in the goals of preventing accidents before they happen.

## 2 Choices Of Dangerous Driving Behaviors Solutions

### Choice: 3rd Party Managed Solutions

The “Managed Solution” offers a means to have someone else provide oversight of your drivers and tell you when you have a potential problem. The system usually involves cellular service as well as monthly service fees and compensation to the service provider for their services, annual contracts may be required.

#### ***Delayed Video File Access***

Companies providing these services have built in services that add value to justify their fees to the customer. The process of managing your video files often involves the addition of a considerable delay in getting valuable video file data when it is required as there is often a structured process that the video files must go through. Immediate file access does not provide them the opportunity to add the value of reviewing the file data and providing the benefit to the customer that their managed service costs are justified by.

#### ***Monthly Managed Solutions Charges***

Managed Solutions require a service plan or subscription to pay for the convenience of letting them review your drivers video files for you.

Service costs may be per vehicle, per month, often requiring an annual contract with penalties for early termination.

#### ***Monthly Cellular Charges***

Managed Solutions require a means or mechanism to transmit the video data files from your vehicle to their facility, such as 3G/4G Cellular so it is understood that there will be considerable cellular data charges for every vehicle, every month that is equipped with their system or encompassed in their managed solution often requiring an annual contract with penalties for early termination.

#### ***Chain of Custody Potential Issues***

Part of the process of 3<sup>rd</sup> Party Managed Solutions often involves transmission of the valuable video file evidence to their facility for processing and review by their personnel. This requires that video file evidence that may be required in court must leave the protective envelope of company control and containment and be made available to the 3<sup>rd</sup> Party staff for processing and review.

#### ***Control of Process under 3rd Party Provider***

In order for a 3<sup>rd</sup> party provider to manage your systems and video files for your company, your company must give up control over the video file stream and access to the files.

In order for a 3<sup>rd</sup> party managed solution, they must be in control of the data flow and have direct access to the raw video file data from your vehicle mounted video data recorders. Many companies have expressed serious concerns to permitting valuable video evidence to be outside their control and in the hands of any unaccountable 3<sup>rd</sup> party regardless of their assurances and good intentions.

## **Choice: In-House Solutions for Piece of Mind & No Service Fees**

In-house solutions are a low cost solution for those who wish to manage the recording process on their own without the complications of a 3<sup>rd</sup> party managed solution.

### ***Immediate Video File Access***

One of the advantages of non-managed solutions is your administration staff can gain immediate access to the video evidence files w/o any 3<sup>rd</sup> party intervention, interface or delay. Within a few minutes of a reported incident your staff has the ability to retrieve and review the video files as you are not waiting on a 3<sup>rd</sup> party to receive, process and review those files before forwarding you their "managed solution" recommendations.

### ***Chain of Custody of Video File Evidence***

Access and control over all video file evidence can help insure there are no breaks in the "chain of custody" of invaluable video file evidence. Company staff and management can insure process integrity, and that access to the files is provided on a need to know basis and insure that unauthorized access to the video file evidence is controlled by management staff and company policy. This level of control can help insure that someone who is outside the management of the company administration does not upload potentially damaging video clips to a social media site for malicious intent.

### ***In House Control of Process***

In-house solutions can provide piece of mind knowing those handling and viewing the video evidence files of your fleet drivers are all working for the same company and all following the same management guidelines. You can control the flow of this video evidence and assure that the video files are not used against your company. All personnel handling the video evidence are accountable directly to your company management. All persons handling the video evidence data have been vetted and qualified via your company hiring process and you have a direct personal relationship with them. Your company can control exactly who handles what video evidence data to insure the "Chain of custody" of video event evidence is maintained.

### ***No Monthly Managed Solutions Charges***

Why pay monthly fees and charges after the problem drivers are identified, documented and dealt with either through training or termination prior to an accident caused by the very problems these systems can document or help identify?

In the worst economy in a century, there is a surplus of qualified drivers looking for a job. Why permit drivers who exhibit dangerous driving behaviors to operate company vehicles and put at risk lives and company assets.

### ***No Monthly Cellular Charges***

Passive systems record to a 100% solid-state memory SD card that can be retrieved and revived on your PCX when necessary. Passive systems do not require cellular service, no service agreements and no annual contracts.

# What Type of Service Best Suits Your Company Requirements?

While it does provide a value to permit the review of incidents by an experienced 3rd party, some customers have expressed potential problems with unknown personnel handling valuable video evidence data files outside the control of the company. Company legal advisors may have serious concerns permitting video evidence of their fleet vehicles to be handled by unaccountable unknown personnel of another company in light that some of the video files may become evidence in a legal environment and they may be concerned with "Chain of custody" issues, or the rare case of whistle blowers who may make valuable accident video evidence public in some online venue in an malicious effort to promote a political social agenda, or to damage the reputation of a commercial carrier.

In general many Dangerous Driving Behaviors may be resolved in the first few months of incorporation of a Driver Safety Camera system, as the drivers learn to become more safety minded and understand what is expected of them in their driving performance, after sufficient management oversight and intervention when needed. After the learning curve the incidence of Dangerous Driving Behaviors may drop to the point that the value realized by a constant monthly management service fee is not cost effective. Customers have pointed out that after the first couple months they required very little monitoring of drivers, that in their words just the presence of the systems and the drivers awareness that they are or could be recorded provided the encouragement needed to maintain safer driving behaviors.

From that point on, the customers may choose to stop continuous use of the systems and wish to simply spot check video data files when a event occurs they wish to learn more about. When you are locked into a "managed solution" you may be legally shackled to a monthly service agreement and the costs thereof whether you choose to use the system or not. This is not a problem when you are managing the system internally; free of 3rd party management contracts and monthly service agreements.

## Mission Statement

The above textual commentary includes biased opinion critical of the mechanism and process involved in any "managed solution". Our goal is to provide a contrast or low cost alternative to those who may not understand how simple these systems can be to operate, comprehend, and how easily you could perform this file review on your own at no additional cost.

We hope to make customers aware of the low cost alternatives that are not being advertised by those promoting "managed solutions".

While value is objective and solely a perception of the customer purchasing that program in order to realize that value, I wish to remind all that the history of Driver Risk Management Devices far predates any modern "managed solution" and until recently all forms of Driver Risk Management devices were customer operated without the need for any outside intervention.

The SD4mX Driver Safety Systems Do Not require any 3<sup>rd</sup> party "managed solution" to permit the user to document, identify and help prevent dangerous driving behaviors of your company fleet drivers.

## Dangerous Driving Behaviors SD4mX Solution

Accelerometer Charting plus Active Driver alerts with 4-channel Video & Audio documentation

The screenshot displays the AVPlayer interface. The top-left quadrant shows a front-facing camera view of a road. The top-right quadrant shows an interior view of the driver wearing sunglasses. The bottom-left and bottom-right quadrants are currently black. To the right of the video feeds is a table with the following data:

Unit ID	Channel	Start Time	Stop Time	Size
ABV Sys 1	1	02:41:34	02:46:00	49.1 M
ABV Sys 1	2	02:41:35	02:46:00	43.7 M

Below the table are search filters: Video Files, Location: C:\Documents and Settings\Ow, Date: (Y-M-D) 2012-12-01, Video Type: All Video. A search bar shows '12/ 3/2012' and '12:54:03'. Below the search bar, it says '2 files found!' and includes icons for Video Files, DVR Log, and Map. At the bottom of the interface is an accelerometer chart with a red line fluctuating around a yellow baseline, and a control bar with buttons for Pause, Stop, Step, FullScreen, Snap, View, Mute, Audio, PlaySpeed, X,Y,Z Diagram, Download Info, and Time Diagram.

Records what the driver sees, how they perform, as well as how they react to the driving environment and events.

Provides an impartial & unbiased expert witness to journey transports with date and time stamped video record with video and audio documentation including GPS vehicle speed and Google On Screen Mapping during playback. Valuable video evidence is recorded to a Secure Digital High Capacity device for 100% Solid-State reliability and integrity of data.  
(No hard drive to crash or fail)

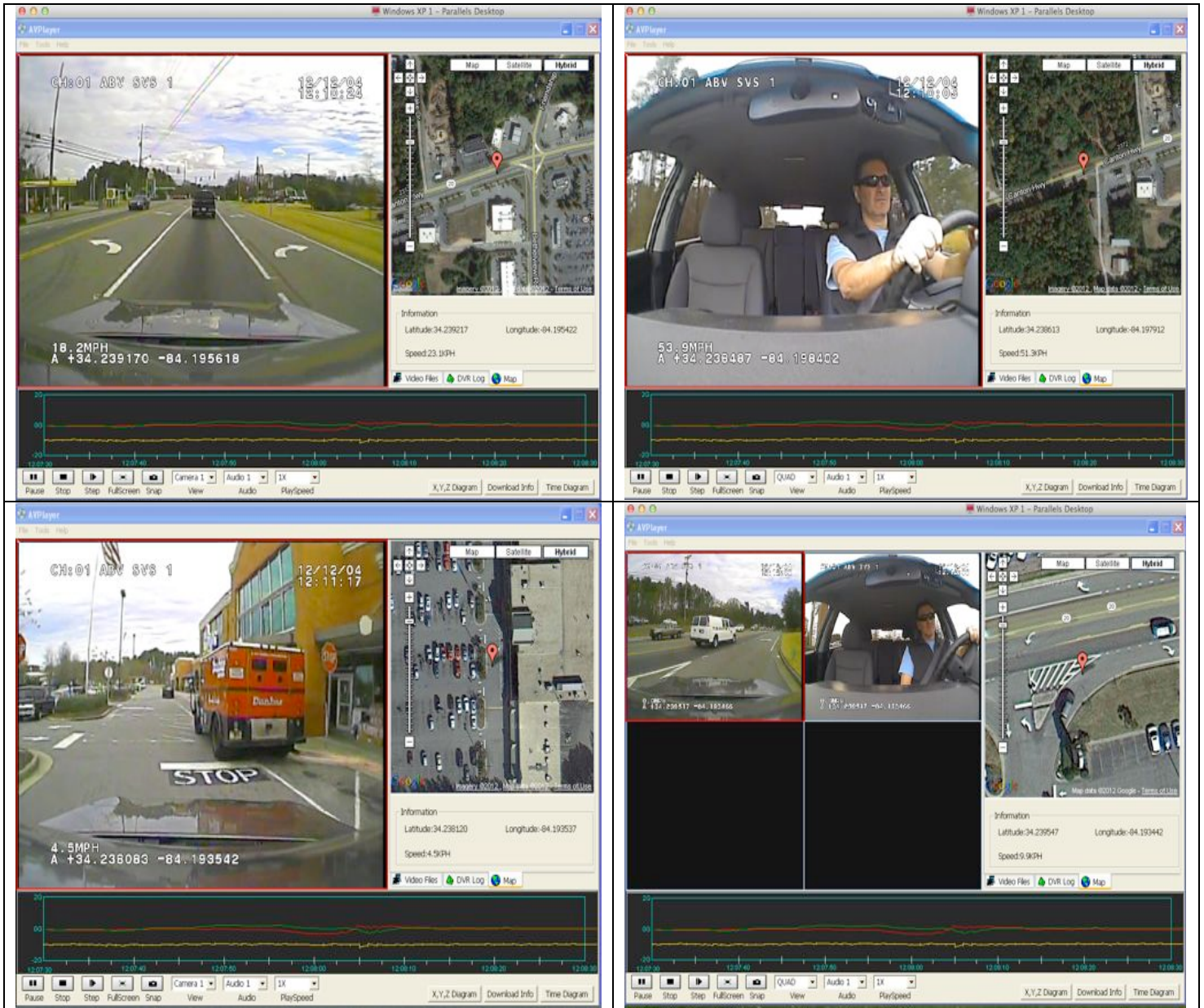
### The SD4mX Driver Safety Camera solution Does Not require:

- \$\$\$ Cellular Service Contract & monthly fees \$\$\$
- \$\$\$ 3<sup>rd</sup> party annual service contract commitment \$\$\$
- \$\$\$ 3<sup>rd</sup> party managed solution charges and monthly fees \$\$\$
- \$\$\$ 3<sup>rd</sup> party handling of your company's valuable video evidence \$\$\$

American Bus Video Inc. 770-263-8118

[DriverSafetyCameras.com](http://DriverSafetyCameras.com)  
[FleetDriverRiskManagement.com](http://FleetDriverRiskManagement.com)

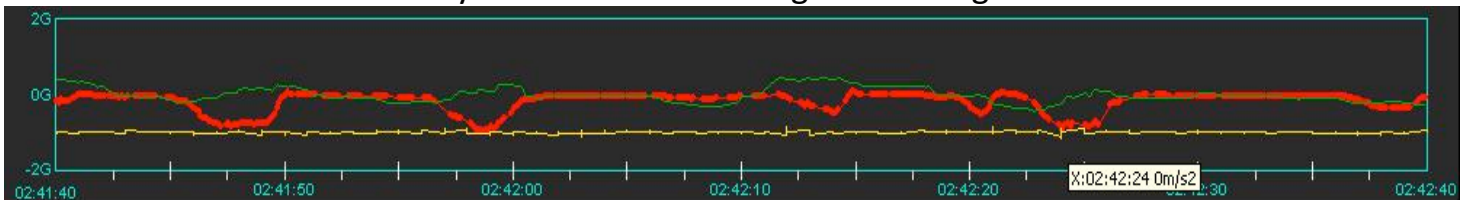




**Stop Dangerous Driving Behavior Now**



Without Monthly Cellular Service Charges & Managed Solution Fees



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[DriverSafetyCameras.com](http://DriverSafetyCameras.com)

[FleetDriverRiskManagement.com](http://FleetDriverRiskManagement.com)

25 Years of Fleet Driver Safety System Sales & Service Experience

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