

## **Top Vehicle Video Camera Considerations**

(Customer contributed direct concerns and questions)

Over the last 21 years in the mobile digital market, we receive hundreds of requests each year and occasionally we get a question that really defines their concerns or their specific needs for a system. The best of those questions have been rephrased and are listed below in the hope it can also assist your district, department or company to learn the most about these systems and technologies and make a truly educated decision.

### **1 - How Long Do You Want Your Vehicle Video System To Last?**

The obvious response should be "As long as the vehicle lasts".

The problem is; I do not know of a single conventional hard drive capable of surviving 15 years sitting still at a desk in an air-conditioned or heated environment.

Now put this same fragile hard drive in a vehicle riding on steel springs, bouncing along on rough roads, in summer heat, in winter cold, high moisture, really rotten vehicle electrical charging systems and it is a wonder they survive their warranty period. In reality many of them do not survive their warranty.

The only digital system I am aware of with any chance of exceeding the life of the average vehicle is the 100% Solid State Drive CF memory card based DVR.

### **2 - How Reliable Do You Want Your System To Be?**

Hard drive based DVRs have the highest failure rates and are poorly suited for mobile vehicle applications due to their fragile design.

How often do they fail from "ideal" office environments?

- **About 560,000 hard drives crash every month** (\*Mozy.com).
- **"Disk drive failures 15 times what vendors say**, study says, drive vendors declined to be interviewed" (Computerworld)
- **The Carnegie Mellon study found hard drive failure "up to 13% observed on some systems"**, (this is from a stationary office environment)

Put these in a mobile vehicle environment and I expect to see a 4 fold increase in their failure rates.

100% Solid State CF based DVRs offer the highest reliability, longest life (Limited Lifetime Warranty), operate in extreme heat, cold, vibration, shock and impact. Why trust video evidence to anything less?

The future is unwritten; circumstance and misfortune can combine without warning creating unanticipated problems in the best-laid plans. Prudence suggests it is better to have a device that works as reliability as possible when protecting the district, department or company from liability concerns.

### 3 - Do You Want To Use This Video In Case of Bad Accidents?

Car Airbags deploy in accidents at about 3 "G"s of impact, or as slow as hitting an object while your car is moving about 7 miles per hour. Often the airbag replacement costs several times the damage to the vehicle.

A conventional hard drive in a vehicle video system can survive about 3 "G"s, which explains why so many of them crash the hard drive when the vehicle hits a large bump, big pothole, storm curb or other object even at slow speeds.

Some salesmen will assure you their hard drive based DVR is "Buffer protected, shock isolated by isometric elastic polymer".

This might be the cynic in me, but I would not let a potential \$20,000,000.00 lawsuit defense rest on 20 cents worth of synthetic rubber bushings or washers likely made in China where they have a hard time making dog food that does not kill the dogs eating it!

When you are purchasing a video system to protect your district, department or company from liability and act as an expert witness in the worst case scenarios, it seems a wise idea to make sure the one you invest district, department or company budget dollars into, will not fail you when you need it most, such as in the case of a bad accident.

This is the type of decision that separates those of vision; job security and career advancement from those who might look back in hindsight after losing the lawsuit due to a failed hard drive system that was damaged in the crash.

### 4 - How Much Future Funding Could You Waste On Memory Repairs?

How often over the long service life of the vehicle do you want to replace the hard drives when they fail through normal wear and tear or from crashes due to bumps or impacts? Lets take the manufacturers at their warranty, the average is 1 year, but lets go with our 3 year warranty. Average life of a vehicle is about 15 years, so it is possible the district, department or company could need to replace the hard drives in each vehicle 5 times.

Who pays for 4 additional hard drives per vehicle after they are out of warranty?

#### **Non-Propriety Hard Drive Cost of \$40**

Your district, department or company could be expected to pay an additional \$160.00 per vehicle in parts alone; of future budget dollars just to keep existing hard drives working until the vehicle is retired. This does not include the labor to troubleshoot the problem, the labor to replace them, the shipping costs, or the possible loss of video evidence when you need it most. **Possible future expense of additional parts \$160.00 per vehicle**

#### **Propriety Hard Drive Cost of \$150**

Your district, department or company could be expected to pay an additional \$150.00 per vehicle in parts alone; of future budget dollars just to keep existing propriety hard drives working until the vehicle is retired. This does not include the labor to troubleshoot the problem, the labor to replace them, the shipping costs, or the possible loss of video evidence when you need it most. **Possible future expense of additional parts \$600.00 per vehicle**

### **100% Solid State CF Card**

Your district, department or company could have no expected costs in parts, of future budget dollars as 100% Solid State CF Memory cards come with a Limited Lifetime Warranty.

**Possible future expense of additional parts \$0.00**

### **5 - Memory Technology Choice; 100% Solid State CF or Hard Drive?**

#### **Hard Drive Based Memory Pros:**

- Massive storage capacity up to a month
- Low cost from Chinese manufacturers

#### **Hard Drive Based Memory Cons:**

- Fragile memory with many moving parts to wear out
- Least dependable memory storage
- Highest fail rates in the mobile environment
- Catastrophic failure in case of serious accidents likely
- Do not work below 32 degrees without heater
- Do not work well in heat without fans

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#### **Solid State CF Memory Pros:**

- Most durable memory with "0" moving parts to wear out
- Most dependable memory storage high "G" impacts or bumps
- Lowest fail rates in mobile environment
- High data integrity in case of accident
- Work in cold down to -76 degrees without heater
- Work in high heat up to 195 degrees without fans

#### **Solid State CF Memory Cons:**

- Maximum storage times 34-64 hour (vehicle driving)
- Maximum 2 camera systems

### **6 - Choice Of Old GPS Versus New GPS w/On Screen Mapping?**

In the past GPS was employed in vehicle video systems as a way to document the vehicle speed on the playback as several vehicle manufacturers had changed their wiring to multiplexed wiring or simply made it bothersome to tap into the speed signal.

Currently there are two methods to offer an improved GPS feature we call On Screen Mapping.

Like the "Introduction to Business 101" example of IBM versus Bill Gates, one manufacturer has chosen to go the way of IBM who pursued the hardware based solutions, while Bill Gates blazed the software solutions.

#### **Method 1, The Hardware Solution**

A Republic of China (Taiwan) DVR manufacturer was the first to offer On Screen Mapping in this market, a new technology application that deserves mention. Unfortunately like IBM this new feature was hardware driven through the incorporation of a large expensive mechanical solution that consumed one of the DVRs video channels. This meant the 4-channel DVR was only capable of recording 3 cameras full time when it had this mapping

feature in use. Technically there is a way I can think of that could in part overcome poor product implementation, but it would involve adding another device, a channel switcher making it even more complicated.

### **Method 2, The Software Solution**

An American DVR manufacturer deserves recognition for taking notes in business school and learning the intrinsic genius of Bill Gates software provided solutions providing this On Screen Mapping free of charge to all customers of their GPS equipped DVR systems. As their path to the same goal was via software not hardware like the most successful PC Software maker in history, not only can they deliver this to their GPS DVR customers free of cost, they also do not require a large and expensive mechanical device that can consume a valuable video channel with mapping, so their 4 channel DVRs actually record 4 cameras full time even with mapping.

#### **With this feature document, verify or disprove a parent claims that;**

The bus was too early and my child missed it.  
The bus was too late, and my child missed it.  
The bus did not stop at our stop,  
My child got on the bus at school, but never got off."  
The vehicle was speeding past our house.

These parent claims can now be verified or proven false with On Screen Mapping and its GPS mapping on screen display.

#### **Document, verify or disprove driver related concerns;**

Did the driver stop at the 4 way stop signs,  
Did the driver stay on route or wander all over the place?  
Did the driver make personal trips in the vehicle?  
Does the driver speed on certain roads?  
Does the driver stop at a railroad crossing?  
Was the vehicle used on weekends for unauthorized trips?  
Where the vehicle is parked during the day and nights.

These driver concerns can now be verified or proven false with On Screen Mapping.

This system option requires no service connection or monthly fees from GPS satellite or cellular service provider. All that is required is a GPS FMI DVR to be played back on a PC that has access to high speed Internet. It then connects to the Internet and provides the On Screen Mapping with the video footage from the cameras as the Meta data is attached to the video record.

### **7 - System Warranty Desired For Your Video System?**

The best warranty we know of for the complete system is 3 Years offered by true American manufacturers selling genuine American Made DVRs.

When you purchase American made DVR based systems you have a built in advantage should you ever have programming or software related issues, you will not have to work around the 12 hour time zone issues as those who designed, built and programmed the DVRs are actually here in the USA!

## 8 - Memory Warranty Desired For Your Video System?

Logically speaking, the hard drive memory is the only part of the digital recording process that; has moving parts that spin around 7,000 RPMs constantly wearing out their bearings, motors platters and arms so it is reasonable to assume this is the only part that can wear out from use even when the vehicle is sitting still.

The best memory warranty we know of is the Limited Lifetime Warranty.

All of our 100% Solid State CF flash memory cards include a limited lifetime warranty provided. As Solid State CF DVRs have no hard drives to fail they last longer.

## 9 – Are You Sending US Tax Dollars To China?

The worst conflict of interest in the vehicle video market could be American schools & Businesses using American tax payer funds to purchase China or Republic of China (Taiwan) DVRs under the false belief they were buying American made DVRs. Whether this was due to an oversight, mistake or they were misled intentionally by a reseller, in a time of recession with millions of lost American jobs, either way the damage is done. I encourage you to ask where your future DVR is manufactured and remember Taiwan, is the Republic of China.

### **Damaging To The US Economy**

- If American Schools & Businesses were led to believe they were buying American made DVRs from a US based company who is owned in part by, or acting as a foreign agent for China or Republic of China (Taiwan)
- If American Schools & Businesses expected high quality American DVRs and got them from a country that cannot seem to produce pet food that does not kill American pets!
- If American Schools & Businesses expected EPA compliant manufacturing that did not damage the environment, pollute the water and air killing their own subjects.
- If American tax payer funds ended up supporting countries guilty of Religious persecution, false imprisonment, sanctioned violence and intolerance
- If American tax payer funds supported Chinas abysmal record of Human Rights abuses

## Other Unique Aspects of American Made DVRs

Should the above questions listed not be sufficient to cause you to believe that the longest lasting, most dependable digital system on the market is a 100% Solid State Digital CF based American made DVR system, we do have three additional claims that are unique to a "Made in USA" DVRs like the one we are offering to your district, department or company:

### **American made DVRs are:**

#### ***EPA (Environmental Protection Agency) Compliant***

The manufacture of the DVR did not violate USA environmental safety standards and meets strict EPA guidelines: to manufacture without harm to the environment.

***DOL (Department of Labor) Compliant***

The manufacture of the DVR did not violate employee safety standards, did not incorporate forced prison or child labor, and meets strict EEOC, NLRB & OSHA guidelines that are mandated and verified with USA manufacturers.

***High Quality USA Manufactured, Tested & Compliant***

Produced to higher USA standards, long lasting, programmed and supported by American workers, investing in America's future for our children and future generations.

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