Outdoor Recreation Tablets:

Getting the most from Outdoor Activities

Executive Summary:

There are boundless emerging opportunities for tablet and touch panel computers in outdoor recreation, but they require expertise in rugged and easy to use computing. Check out Estone Tech's latest solutions for outdoor recreation tablets, and some of the popular emerging areas where they may be used.
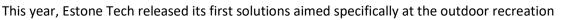
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Hiking and Biking, Surfing and Skiing, Golf, Tennis, Riding – almost any outdoor activity today can often be augmented with digital apps and technology that record progress, suggest options for improvement, warn of inclement weather, and even request or order amenities, where available. In some cases, such as running or biking, these apps are best operated from a smartphone or smartwatch, which, with its myriad of sensors like GPS and inertial sensors, can function as a trail guide, exercise counter, and much more. But in many cases, due to durability issues, access challenges, or the need for interacting with a host business or organization, personal electronics are not enough to let people get everything they should out of their activity. That's where specialized tablets & panel PCs for outdoor recreation activities come in.

In this paper, we will examine a few common outdoor activities that are best augmented with a tablet or panel PC, and how that technology can improve the experience for individuals and businesses.

Estone Tech's Outdoor Recreation Solution

This year, Estone Tech released its first solutions aimed specifically at the outdoor recreation market – the GM-70 and GM-100 tablet-style PCs. The Estone solution offers 7" and 10" options with VESA mounting for easy and secure use in outdoor vehicles and stations everywhere.

Product Highlights Include:

- Sunlight readable LCD Screen
- Anti-Glare & Anti-Reflectivity Coatings
- Adaptable Android Operating System
- 10 Point Touch Panel – Glove Friendly
- IP65 Waterproofing
- CAN bus J1939 and NMEA2000 Option

Check out the product datasheet [Appendix A] to learn more about Estone Tech solutions.

ATV and Off-Road Vehicle Embedded PCs

The primary goal of off-roading is to explore terrain one has never seen before; through rivers, across muddy trails, and over dunes. Over the past few decades, off-road vehicles have moved from light, minimalist motorcycle-like vehicles to robust, four (or more) wheel drive vehicles that enable operators and adventure seekers to tackle even the harshest terrain. All the while, off-road vehicles have gained more amenities and safety features; like bucket seats and multi-point security harnesses, satellite radio and premium audio systems, and power ports & connectivity for external equipment.

This makes these vehicles able to not only reach new heights in rugged exploration, but also to become a centerpiece for outdoor entertainment and recreation, as essential for the family camping trip as they are for life on a rural farm. But, with space at a premium and exposure to harsh elements all but

a given, integrating all of the features necessary for backcountry exploration and family fun can be challenging. That's where an Outdoor Recreation Tablet or embedded touch panel PC comes into play.

Weatherproof touchscreen computers like those from Estone Tech are able to condense a vast array of switches and controls, a GPS unit, entertainment units, and other extras into a single control board that stands up to the challenges of the trail. Whether it's finding one's way through the forests of a preserve, or keying up a favorite satellite radio station while a group of friends relaxes near the campfire, an embedded or removable touch panel PC will provide the interactivity needed, while also controlling vehicle systems like lights or heaters, and, if necessary, providing details about engine performance, fuel levels, and other systems.

Essential features for an ATV computer system include a high IPXX rating, glove friendly operation, and a scratch resistant screen.

IPXX is a standardized rating system for water and debris resistant devices[1], with each "X" providing a rating between indicating the level of device protection vs water or debris. For instance, a device intended to be underwater all the time may have an IP rating of IP18 – which means it is in no way debris proof, but suitable for continuous use under water at depths of more than 1 meter. For an off-road vehicle tablet, subject to mud, rain, sand, and splashes, a rating of IP56 would protect against all but the harshest sandstorms and full submersion.

Meanwhile, the touchscreen must be glove friendly and resistant to scratches to ensure comfortable operation while on the trail, and a long life-cycle undiminished by a hard to read screen. Estone Tech screens are chemically hardened to 7H+[2], and will resist scratches from most common debris and particles. And because nobody spends a day on a outdoors without sunglasses, it's imperative that tablets for outdoor recreation be polarized to resist glare and show up well through sunglasses, as Estone Tech tablets are.

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[1] https://en.wikipedia.org/wiki/IP_Code
[2] https://en.wikipedia.org/wiki/Mohs_scale_of_mineral_hardness

Tablet PCs on the Golf Course

Away from the rugged back trails and campsites of ATV Off-roading, other vehicles are patrolling gentler fields, but still subject to many of the same environmental strains. Golfers on courses nationwide deal with rain, intense sun and heat, and the very bouncy, up and down nature of challenging courses. While golfers don't generally need technology to enjoy a round, many choose to take advantage of what technology can offer to improve their game, with course maps, distance estimators, and even swing analysis technology available on smartphones and other pocket devices everywhere.

While an individual isn't likely to bring a tablet or panel PC onto the golf course, the course or club itself may find it very beneficial to provide this technology, mounted for easy access in golf carts or in standalone stations throughout the course. Such tablets allow the course to provide their preferred course maps, alert golfers to temporary changes or obstacles, advertise for partner businesses or other course amenities, and even improve refreshment and supply sales.

The latter benefit is also likely to be the biggest draw for golf courses nationwide. For the first time since 2012, the number of rounds of golf played in the US in 2016 increased slightly[3]. But as that follows years of declines or flat play, overall course revenues from rounds golfed are still down substantially from their pre-recession highs. To counter that, golf courses nationwide have been looking for ways to boost revenues outside of greens fees. This includes approved amenities that attract membership, as well as increased food and beverage sales. Some golf courses report that daily beverage cart revenues often exceed $1000USD per cart – totaling nearly as much as the greens fees for that day, alone. The secret, they say, is to ensure that golfers see the cart frequently[4].

In-cart tablets will do the whole system one better, by allowing golfers to summon the beverage cart to their location, via WiFi or Cellular connection, simply at the touch of a button. They can even ensure that the beverage cart arrives stocked with their drinks and snacks of choice.

Essential features for a golf course tablet or embedded PC include a rain-resistant design, and a heat-resistant design that is easy to use and see even on the brightest, hottest days. Estone Tech tablet style PCs for golf carts have a high IPXX rating, and a screen brightness over 1000 CD/M (Candelas per Square Meter), ensuring easy use even in direct sunlight.

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[3] https://www.golfdigest.com/story/number-of-golf-rounds-played-in-2016-are-through-the-roof

[4] http://www.ngcoa.org/infocentral/applications/DocumentLibraryManager/upload/Beverage%20Cart%20Selling.pdf

Detachable Tablets for Outdoor Sporting Leagues

Don't lose your tools & features because you want to get out of the vehicle. All around the world, advanced analytics and instant review are becoming de rigueur for sports teams from public high schools to pro leagues. Tracking player performance may lead to a sabermetrics insight on who will have the hot hand, and video at practice can be instantly broken down to help a player find the hitch in their kicking or swinging motion. But it's often not convenient or possible to keep a large computer system near the field of play, and smartphones or commercial tablets may lack the computing power or durability to be useful in such a situation.

This is another area where custom rugged tablets are extremely useful in outdoor recreation. Since tablet PCs first started appearing around NFL programs in the late aughts[5], they have grown in popularity across all sports. In fact, teams now use them everywhere from in the training room to watch specialized film that has been cut for each player, to hotel rooms where coaches receive the latest news and analytics on free agents, recruits, or opponents that can help their teams make tactical decisions.

Tablets such as these typically need less physical protection – usually a sturdy case for drop and impact protection is sufficient – but a higher power processor and more advanced internal components, to ease the use of a variety of media and speed up data analysis. Estone Tech offers a variety of durable business tablets for these uses.

Custom Made Fun (OEM/ODM Tablet Solutions)

In addition to the above mentioned instances, there are many, many more outdoor sports and activities that may benefit from the addition of a rugged tablet or panel PC. Imagine adding interactivity to a camper, or tracing the best paths and currents while hang gliding. Regardless of the exact purpose, outdoor fun is rarely off the shelf – each custom experience requires custom technology solutions to get the most from it. Estone Tech remains ready to help any company find solutions for Outdoor Recreation Technology. Our OEM/ODM experience in rugged tablet PCs and panel PCs makes us the first choice for countless companies in dozens of markets.

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[5] http://www.cnn.com/2011/11/12/tech/tablet-computers-and-sports/index.html