



**Thank you! InReach 2014 National Geographic Gear of the Year Award and more.**

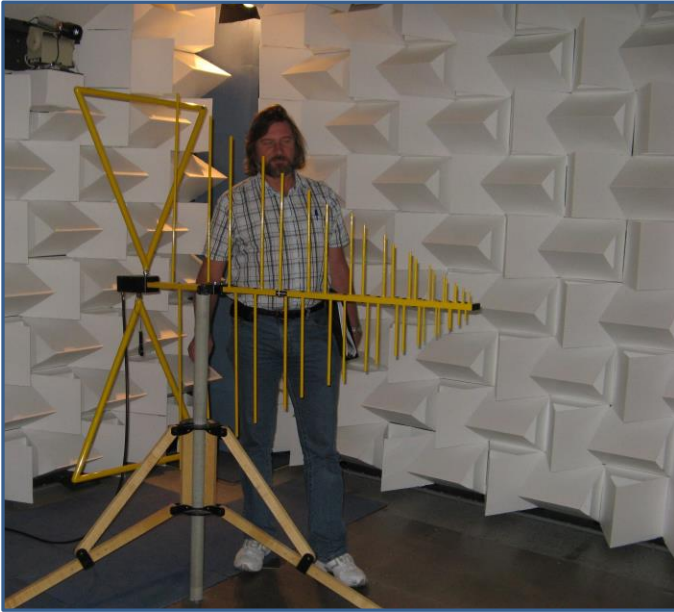
**InReach satellite communicators enable you to send and receive text messages, trigger an SOS for help, and track your GPS coordinates, wherever your trip takes you. It keeps you connected when off the grid and outside of cell phone range. The inReach is a crucial piece of gear for military, search and rescue, diplomatic service, humanitarian service and other organizations to minimize risk and help ensure the safety of their personnel, wherever they are deployed.**

**InReach Family** is one of my favorite projects. First was the InReach Original Two-Way device. Second, the famous InReach-SE was born. Both of them were designed from scratch, which gave us the opportunity to invent something totally new, relying on experience and intuition. Only after I designed power and GNDs concepts, we started to specify the whole project design. It helped us to minimize EMI noise level, improve Signal to Noise Ratio. Also it significantly improved antenna's efficiency - the device contains 3 radio channels: Iridium, GPS and Bluetooth. I used PSpice and other PF simulations and modeling not just for schematic's ideas, but also for the layout design. We're creating the PCB with all the possible precautions. During this work were used some of my interesting ideas and methods (some of them you can find on my website). Partly for that we didn't have any serious problem with PCB.

The InReach appeared to be as good as we expected. The satellite connection was very reliable, and the GPS circuit had great sensibility and noise immunity. The device was send into production extremely fast. Our small but united team was very proud of it.



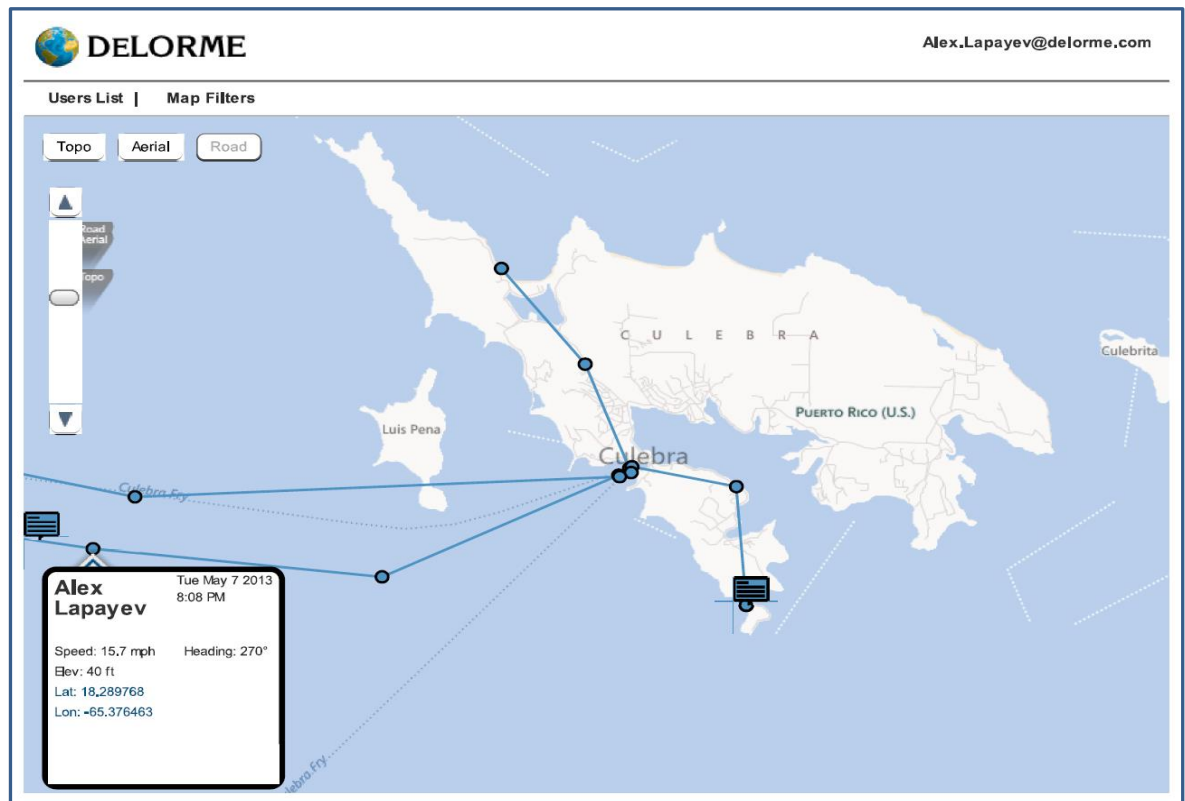
**Trigger an SOS and communicate to the rescue monitoring center.**



- Did you already switch on your device?  
- Yes  
- Really?  
- Yes  
- Are you sure?  
- Of course, what is going on?  
- Strange, we can't see any noise.....

*That is a conversation during the EMI/FCC test of InReach.*

It's obvious to say, the level of input GPS signal exceptionally low, and totally depends on the level of surrounded interference signals. Unfortunately, we are mostly surrounded by smart devices with frequency 2.4 GHz, which is near to GPS frequency. That is why I decided pay as much attention to POWER/GND concept, shielding and filtering. It took for me a while to calculate and simulate everything. After producing a PCB I decided to check how the GPS signal will be jammed by the work of BlueTooth module in the transmit mode. I was completely stunned and happy when I found out the there is almost no difference in the GPS Signal to Noise Ratio with the BlueTooth transmit mode being switched on or off.



Alex Lapayev

InReach several links:

<http://inreachdelorme.com/>

**1. Thank You, Thank You, Thank You! The InReach awards.**



We try to be pretty low-key about our accomplishments. After all, word gets out that you've created the first affordable two-way satellite communications device ever, and suddenly things are out of control: first there's fan mail; next thing you know, people are noticing you on the streets.

<http://www.inreachdelorme.com/about/awards.php>

**2. Never have there been more ways to find your way.**



No matter where your adventure takes you, inReach can help you share and protect your life anywhere in the world. From a simple "I love you" message to an urgent SOS trigger, inReach keeps you connected and safe anywhere in the world when outside of cell phone range. With fun facts, compelling stats, and real-life stories, this page is dedicated to living the inReach life and how it is enhancing people's adventures the world over.

<http://www.inreachdelorme.com/why-inreach/life.php>

**3. Grand Canyon Rafter Airlifted Out Within One Hour of SOS**



The award-winning inReach two-way satellite communicator was a critical factor in a recent rescue. The two-way communication capabilities and Iridium® global coverage helped a group of hikers to communicate with rescue personnel and have a helicopter onsite within one hour of contact...

<http://blog.delorme.com/2013/11/15/grand-canyon-rafter-airlifted-out-within-one-hour-of-sos/>

#### 4. Pilot Walks Away from Alaskan Plane Crash with inReach SE



Will Johnson of Fairbanks, Alaska is a 66-year-old experienced commercial pilot operating Yute Air Taxi and a certified flight instructor with more than 20,000 hours of flight time, but in early August 2013 he experienced engine failure for the first time...

[http://www.inreachdelorme.com/why-inreach/pilot\\_walks\\_away.php](http://www.inreachdelorme.com/why-inreach/pilot_walks_away.php)

#### 5. Sailing Adventure Ends in Rescue off the Coast of Nicaragua



For Gulfport, Mississippi native Zach Morrison, adventure has always come calling. A former golf pro, avid traveller and sailing enthusiast, Zach says that he's known among his friends for attempting crazy things. So when he announced that he was planning to purchase and restore a 1937 55-foot schooner and sail it from Los Angeles to Gulfport through the Panama Canal his friends weren't surprised, but they were worried for him nonetheless...

[http://www.inreachdelorme.com/why-inreach/rebel\\_yell.php](http://www.inreachdelorme.com/why-inreach/rebel_yell.php)

The screenshot shows the Amazon.com interface. At the top, there's the Amazon logo, navigation links like 'Your Amazon.com', 'Today's Deals', 'Gift Cards', 'Sell', and 'Help'. A search bar is present with 'Electronics' selected. On the right, there are links for 'Hello, Sign in Your Account', 'Try Prime', 'Wish List', and 'Cart'. Below the navigation, a category bar lists 'GPS & Navigation', 'Best Sellers', 'Vehicle GPS', 'Sports GPS', 'Accessories', 'CB & Two-Way', 'Marine Electronics', 'Car Electronics', 'Wearable Technology', 'Trade-In', and 'All Electronics'. The main content area features a section titled 'Customers who viewed DeLorme AG-009871-201 inReach ... also viewed:' with three product recommendations:

- DeLorme AG-008727-201 InReach Explorer Two Way Satellite Communicator w...**  
Buy new: \$379.95  
13 Used & new from \$339.95  
★★★★☆ (49) Prime
- SPOT 3 Satellite GPS Messenger - Orange**  
Buy new: \$129.99  
77 Used & new from \$125.00  
★★★★☆ (114)
- DeLorme AG-008449-201 inReach Two-Way Satellite Communicator for Smar...**  
Buy new: \$309.99  
2 Used & new from \$265.00  
★★★★☆ (48)