

Case Study

TI's Customer Support and Small, Power-Efficient RFID Products Prove a Winning Combination for DLP Design

Problem

In early 2005, after attending a series of IEEE meetings which focused on RFID, it became clear to DLP Design owner and CEO, Don Powrie, that the technology presented a powerful business opportunity for his company. DLP Design develops USB-based products including RFID readers, RF transceivers and FPGA-based development kits to customers worldwide. Like many technology companies, Don was paying close attention to recent RFID implementations to include inventory tracking and supply chain management efforts. Being entrepreneurial and quick to notice an area of growth, he did his research and found an opportunity to seize. Upon further investigation, he realized the industry's leading RFID supplier, Texas Instruments, was located just a short distance from his own DLP Design manufacturing facility.

With both the market opportunity and the chipset supplier in his sights, Don decided to develop an RFID reader product. His idea was to utilize his USB expertise and TI's RFID technology to bring about a suite of USB-based RFID readers that would sell into both typical and atypical applications such as corporate training applications or consumer driven applications like wine tracking and data retrieval.



DLP Design initially engaged with TI in October 2005 seeking ease of implementation, technical support and time to market benefits. While engagement with TI was relatively easy, bringing his idea from concept to design implementation was a little more difficult. During the product design stages for the RFID1 reader, DLP Design encountered some critical design challenges related to the microcontroller firmware as it interacted with the RFID chip. It was at this juncture that Don sought help from TI. Knowing these challenges had to be quickly resolved; Don looked to TI for solutions, speed and precision. After a few discussions, TI determined that to follow through on Don's original vision, he would need to

utilize a different RFID chip – one that featured built in support for anti-collision features in the RF IC. However, working with a new chipset, the TRF7961 www.ti.com/trf796x and MSP430 www.ti.com/msp430, would also mean a few design changes. TI assured Don that he would still meet his timeline and development goals, despite the changes, and the two

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companies went to work resolving the microcontroller firmware issues. TI also provided Don with a demonstration hardware module to help him develop the product's host software.

"Texas Instruments' provided DLP Design with hands-on apps engineering resources which helped us tune the antennae. Additionally, TI also worked with us in the lab to help us get the RFID1 Reader ready for testing and the market," said Don Powrie, of DLP Design.

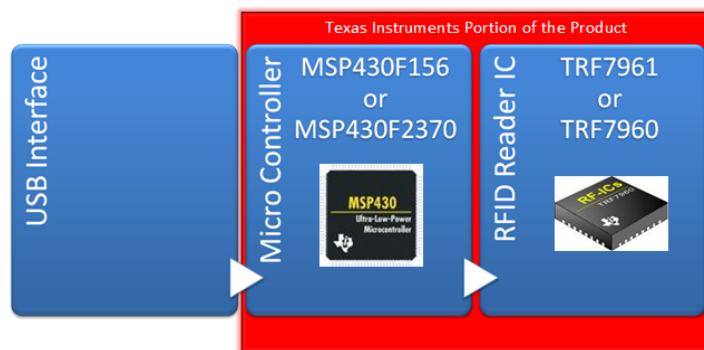
"I've had many suppliers that will talk like they want to help and will send you all kinds of data sheets, application notes and other documentation. But not once - in my 20 years of experience - has an applications engineer sat down with me and to make sure the product works. Equally as important, TI stayed with us to make sure we got it right. If it wasn't for that TI application engineer, I would not have a reader on the market."

TI and DLP Design engaged in October of 2005 and six months later Don took the reader to the test lab. "I was reading tags five months into the process," Don continued. "The RFID1 reader passed the FCC Part 15 test in mid-2006 and I immediately began selling it through a distributor." However, that is just where the DLP/TI success story begins.

Solution

The success story for Don Powrie's DLP Design RFID1 Reader is actually two-fold. Part one of his success story begins with Texas Instruments and the support he garnered from TI's talented application engineer. Part two, is what happened later and the success reputation Don's company has earned with Microsoft, Inc., since selecting TI as his supplier.

DLP-RFID1 Block Diagram



With his reader complete and selling through a distributor, Don was winning business. Then Don got the call that promised to take his RFID1 Reader sales to new heights. Mick Badran, a trainer for Microsoft's BizTalk Server RFID training program, contracted DLP Design to see if the RFID1 Reader would complement his training course. The training, a hands-on RFID developer course, is designed to give students working knowledge of how to

innovate with RFID. Mick uses a parking system as the training application in which students leverage RFID to track the cars entering and exiting the car park. The training also utilizes RFID to demonstrate the technology facilitating payment processing. After completing the training course, attendees are encouraged to apply what they've learned about RFID technology in their work environments and explore how it can be implemented across multiple applications. Prior to contacting DLP Design, Mick had experience with RFID, but was using older technologies that were not intuitive or effective teaching devices.

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When Mick was designing the curriculum for the RFID training, he was looking for an RFID tool that would round out the real-world training exercise. He wanted the students to have a more realistic and tangible training experience and enhance the creative side of technology development. “I needed a device that was not going to break the bank as I wanted students to walk away with these [RFID readers],” said Mick. “I have always been interested in RFID and with my 13 years of training experience, I wanted to combine my professional passions together.”

Mick went on to say, “With RFID, there is a unique opportunity to present, in a very tangible way, the value of combining hardware innovations with software. The DLP readers built on the TI chipset and microcontroller make the Microsoft BizTalk Server RFID training sessions come alive. When our training partner, Breeze, delivers the training the attendees aren’t just talking theory. They are rolling up their sleeves and getting practical experience on what it takes to build real world RFID applications on the Microsoft platform. That is something they can immediately apply in their workplaces. We have been pleased with the reliability and ease of integration of the DLP readers into our training.”

For Don Powrie at DLP Design, having Microsoft as a customer is a multi-layer win. Each student that attends the Microsoft BizTalk training session walks away with one of Don’s RFID1 Readers. As they take these devices with them, each attendee becomes a potential customer for his readers.

DLP Design’s DLP-RFID1 Reader is recognized among customers for its ease of use and its programming library. The programming library enables customers to add a layer of flexibility. That flexibility gives customers the opportunity to program at a much higher level than the native protocol of the reader. The DLP-RFID1 is a single channel solution. The company also offers an 8-channel reader, the DLP-RFID-LP8C. Don continues to work with TI and designing with the company’s state of the art technology. Most recently, the medical industry has asked DLP Design for assistance whereby they will use RFID in research and diagnostic equipment.

As for the RFID training at Microsoft, Mick says, “DLP-RFID1 is a great device that students to walk away with. We can play around with simulators all day long, but the real magic of an RFID-based solution is the reader tags components.”

To learn more about the full suite of Texas Instruments’ RFID solutions and its 18-years of experience in a industries that include livestock, luxury goods, library, waste management, medical, secure payments and secure documents visit us at: www.ti/rfid.com

For more information on Don Powrie’s DLP Design product portfolio visit www.dlpdesign.com.

If you are interested in Mick Badran’s training through Microsoft, you can visit his blog at: <http://blogs.breezetraining.com.au/mickb/2008/03/04/BizTalkRFIDSolutionDaysWrapUpAndASomePlayTime.aspx>

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About DLP Design

DLP Design, Inc. was established in 2000 as a provider of evaluation hardware offering a single USB adapter module. Today, our product line has grown to over 30 USB-based products including RFID readers, RF Transceivers and FPGA-based development kits that are distributed in over 50 countries around the world.

About Texas Instruments RFID Systems

Texas Instruments is the world's largest integrated manufacturer of radio frequency identification (RFID) transponders and reader systems. Capitalizing on its competencies in high-volume semiconductor manufacturing and microelectronics packaging, TI is a visionary leader and at the forefront of establishing new markets and international standards for RFID applications. For more information, contact RFID Systems at 1-800-962-7343 (North America) or +1 214-567-7343 (International), find this and other RFID case studies at www.ti.com/rfidnews , or visit our Web site at www.ti-rfid.com.

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