

# TOUCHSCREEN TRIUMPH: DMP DELIVERS INNOVATIVE SECURITY KEYPAD IN MONTHS

Digital Monitoring Products (DMP) has built a reputation for excellence in technology, service and design by releasing ground-breaking intrusion, fire, access control and cellular alarm products. Their desire to forge ahead with a new touch screen interface for a next generation security system inspired them to investigate solutions for advanced user interface development.



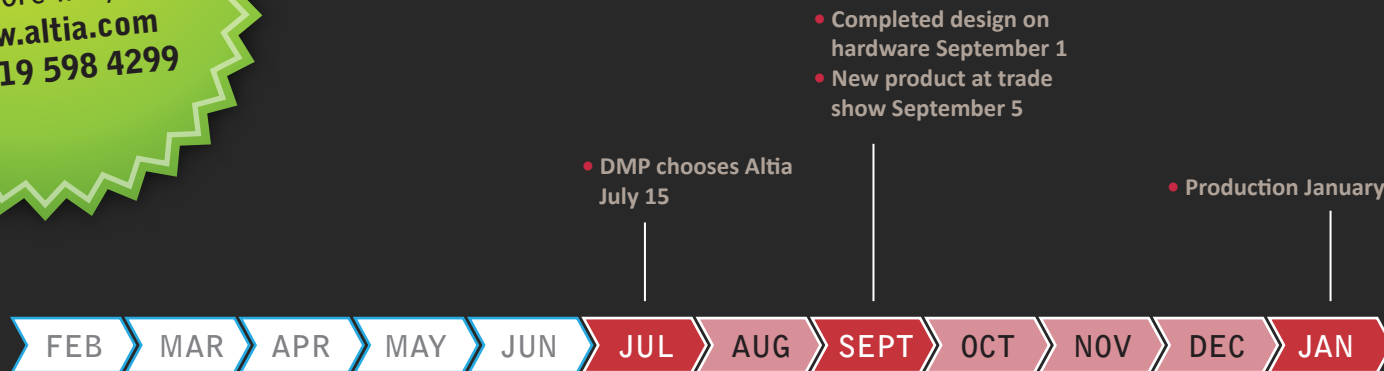
## The Challenge

DMP had already selected the NXP LPC1788 for its balance of performance, price point and low power consumption. This micro-processor was an obvious win from a bill of material and energy usage standpoint, but like all targets in this price category, it presented some significant challenges for delivering a truly cutting-edge user experience for users so accustomed to the smart phone look and feel.

DMP had set an aggressive delivery date for their first generation product demo. Their target was a tradeshow that was scheduled less than three months away. Additionally, DMP had not ventured into the realm of graphically rich and deeply embedded user interfaces so their team needed to ramp up...fast!

**“THE ALTIA-OPTIMIZED GRAPHICS  
CODE TURNED THAT NXP LPC1788  
INTO A VERITABLE WORKHORSE”**

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## The Solution

### July: Definition

DMP hired Altia to do initial GUI model of their product while collaborating with their engineers to define scope, graphical vision and immediate goals for their new product.

### August: Design

Altia's previous experience with customers implementing GUIs for industrial remote controls, home automation and security applications provided the DMP team with upfront knowledge of the challenges they would face.

As part of its initial investigation, DMP also tapped Altia's hardware expertise with myriad hardware platforms to insure that the NXP LPC1788 was up to the task for this project. This involved DMP engineers and Altia running test screens over various microprocessors to get a feel for real world performance of the UI design.

### September: Implementation

The Altia Services team transferred the first generation design to DMP. In a matter of three months, DMP defined, designed and implemented their vision – and got that new product in front of their customers at an industry tradeshow.

Due to the limited internal SRAM and DMP's display hardware selection, the Altia Deepscreen generated code is utilizing external SDRAM to contain the double-buffered display frame buffers. The hardware display resolutions range from 320x240 (QVGA) to 480x272 (WQVGA). Also, due to the limited internal program flash and graphics intensive nature of the DMP product's user interface requirements, external flash is utilized for GUI asset storage for all image, image alpha mask, font and stencil data.

### January: Production

Less than six months from the project kick-off, DMP took their latest product from commitment to production code. During this time, Altia trained the DMP engineering team on the use of the Altia tool chain. DMP leveraged their new expertise in Altia to implement many changes to the tradeshow concept that had been delivered by Altia in September. Those DMP refinements are now lighting up the production security device.

**“ALTIA IS KEY TO OUR SPEED-TO-MARKET”**

**“OUR TEAM COMPILED A LIVE WORKING PROTOTYPE WITHIN A WEEK OF COMPLETION OF THE NEW LOOK”**

## The Results

Together, DMP and Altia were able to make the NXP LPC1788 a low-power powerhouse for this product. The teams were able to quickly flesh out the graphical requirements of the UI as well as key user experience touch points. They worked in tight iterations to get the best performing GUI on this low cost hardware solution. This process allowed DMP to meet their intermediate milestone – delivering a first generation product for an industry tradeshow. Finally, Altia successfully handed off the project to DMP for production and future enhancements. They now plan to extend this product to iPhone and iPad.

**From NXP to iOS, Altia provides the tools and services to help companies like DMP deploy next generation GUIs – fast.**