



TouchSense® Solution for Kitchen Appliances and White Goods

Leveraging the technology and user experience from the consumer electronics, mobile phone and automotive markets, TouchSense 2000 brings the benefits of haptics to the next generation of appliances today.

Kitchens and bathrooms are the most important rooms in our houses. Not only should these rooms be comfortable, but also functional. As home networks and internet connectivity in appliances merge together, easy and intuitive user interaction becomes a key to product success.

Highlights

- Gives users a unique and satisfying experience with your product
- Allows for implementation of an easy to clean surface
- Enables the next-generation touch interface including LCD touchscreens integrated with touch controls
- Provides immediate and unmistakable confirmation to help increase user confidence and satisfaction
- Overcomes disadvantages of membrane switches

TouchSense tactile feedback helps you meet demand for intuitive access to a growing number of features and supply a better user experience.

A competitive advantage

A recent survey by the national kitchen and bath association shows that the most popular trend in kitchen designs is the inclusion of an entertainment or smart area, including a computer or television.

Adding these features and avoiding control clutter while providing intuitive access to multiple controls, and maintaining ease-of-use. This is a tall order, but the TouchSense System can be used in creative ways to guide the user according to the context of operation. The heightened interactivity provided by tactile feedback can also provide a more engaging usage experience that can give your appliance a competitive advantage.

Users prefer touch feedback

Because users know instinctively that their input was received by the system, they can be more efficient and confident. Confidence usually inspires acceptance and use, important outcomes for passing installation trials and winning larger orders. Further, independent research* shows that tactile feedback:

- Increases speed and accuracy of data input
- Reduces cognitive loading, making operation easier
- Increases user satisfaction

How it works

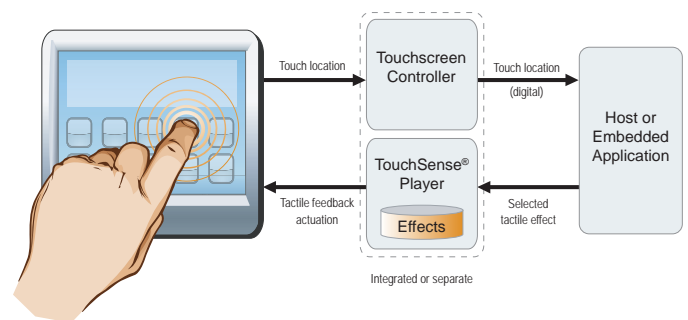
In response to presses on a touch surface or touchscreen, the TouchSense system uses software and firmware to control an actuator in producing a wide variety of vibrations or “effects.”

TouchSense system components include:

- TouchSense player and control electronics embedded on a circuit board
- TouchSense actuator(s)
- Tactile effects library

A design kit, including software toolkit, makes it easy to get started.

When the user touches the screen, a position signal is sent to the host application. The host application interprets this signal and commands the TouchSense player to control the actuator in playing one of a wide range of tactile effects. The actuator transfers its vibrations to the touch surface or screen, which gives the user the perception of pressing a button or sliding a scrollbar.



Over 100 predefined effects vary in frequency, magnitude, wave shape, and duration. This allows the reproduction of the press and push-away characteristics of various mechanical switches to complex nonlinear vibrations. The feedback creates a tactile communications link between the user and the device that is limited only by the user interface designer’s imagination. These effects can be added to achieve unique tactile sensations to clearly differentiate selections and provide context-appropriate confirmation. Detailed electromechanical design and integration guidelines and the software toolkit help ensure an optimal implementation of the TouchSense System in your appliances.

*For a summary of recent published findings on the value of tactile feedback in human-computer interaction, see the Immersion white paper *The Value of Haptics*, available at www.immersion.com/docs/Value-of-Haptics_Jun10-v2.pdf.



About Immersion

Haptic technologies are transforming digital devices everywhere. Electronics manufacturers are providing digital controls with authentic tactile confirmation. Industrial and commercial manufacturers are increasing the accuracy, efficiency, and safety of the user experience. Content developers are creating a more engaging experience for mobile handset users. Game developers are captivating users with more intense and enjoyable entertainment. Medical schools and hospitals create a more realistic and engaging multisensory experience for surgical simulation training. Immersion technology puts the sensation of touch in the hands of visionary manufacturers worldwide.

Founded in 1993, Immersion Corporation is the recognized leader in digital touch technology and products. Immersion's technology is deployed across automotive, consumer electronics, entertainment, industrial, medical training, and mobile products. Immersion holds more than 900 issued or pending patents in the U.S. and other countries.

For more information about adding tactile feedback to your kitchen appliances or white goods, visit www.immersion.com/products/touchsense-tactile-feedback/2000-series/ or e-mail: touch@immersion.com.

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