

## TouchSense® Tactile Feedback Design Kits for Large Touch Applications – 1000 Series

TouchSense® Design Kits include components and documentation for prototyping touch screens, touch panels, and touch surfaces haptic feedback into your target product. The 1110 design kit is suitable for touch systems from about 6 to about 17 inches (diagonal); the 1300 kit is suitable for touch systems larger than about 15 inches (diagonal).

### Highlights

- Supplies touch feedback for touchscreens
- Provides components, software, and instructions for prototyping
- Supports multiple design configurations, preserving your product design options

### Touchscreens that touch back

TouchSense technology enables touchscreens to generate tactile cues, promoting a more intuitive, engaging, and natural experience for the user. Users feel that onscreen buttons press and release similar to mechanical buttons. In addition, tactile effects can be synchronized with sound and graphical images, creating a more engaging and multisensory experience.

When touchscreens touch back, applications for banking, education, entertainment, fitness, health care, hospitality, manufacturing, retail, and transportation provide unmistakable confirmation that promotes user efficiency, understanding, and satisfaction.



Improve accuracy, efficiency, safety, and overall user experience with tactile response that eases and confirms interactions.



Note: The design kit photo helps identify components available in a kit and may not look exactly as pictured.

### Kit for prototyping

TouchSense Design Kits include components and information that designers, engineers, and integrators need to prototype TouchSense tactile feedback in a target product:

- Design guide
- TouchSense actuators (type and quantity depending on touchscreen size)
- Two TouchSense control boards with TouchSense player software and effect library embedded, supporting serial and USB connections
- Universal input power supply
- Cables and fasteners
- Software toolkit
  - Programming guide
  - Windows ActiveX control and API library
  - Windows sample application and demonstration files
  - API and sample application source code to facilitate porting to non-Windows platforms

### Well-documented integration process

The design kit's documentation guides you through the steps to design and build TouchSense-enabled products. These steps cover mechanical, electrical, and software integration:

#### Mechanical integration

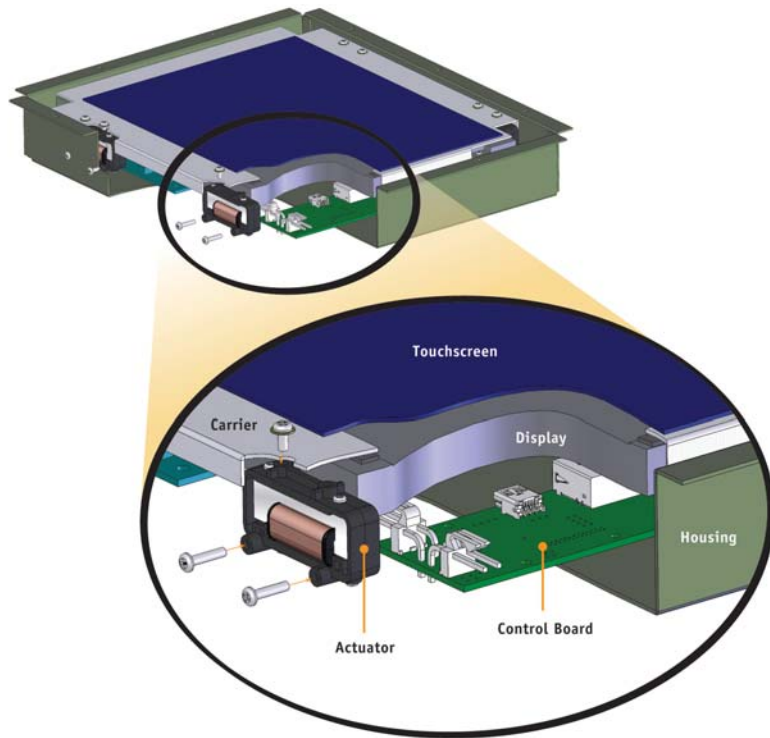
- Identify key system parameters
- Select the appropriate size, number, and location of TouchSense actuators
- Design bezel, carrier, housing, and seals

#### Software integration

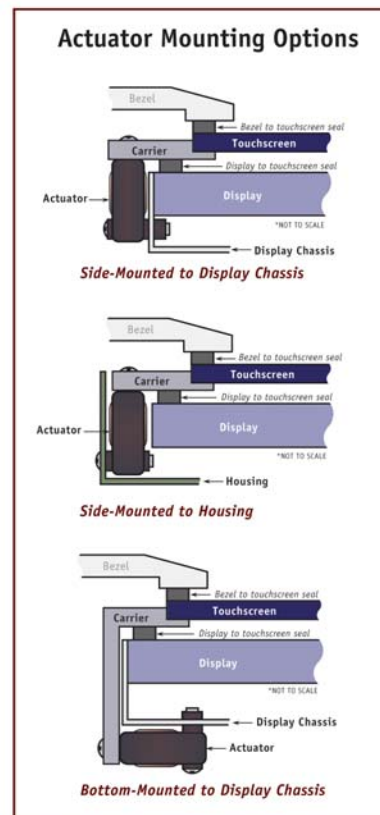
- Determine approach: ActiveX control, supplied API, or your own custom interface
- Select tactile effects pre-loaded in controller and implement within the host application

#### Electrical integration

- Select power supply and TouchSense control board or microprocessor
- Define host communications and actuator connections



TouchSense actuator and control board shown in relation to the touchscreen carrier, display, and assembly housing.



### TouchSense components

A TouchSense implementation incorporates the TouchSense Player on a control board or microprocessor, actuators, and a touchscreen carrier designed using Immersion-supplied guidelines. The guidelines also outline various options for positioning and mounting the actuators to the carrier for meeting objectives for overall size of the LCD assembly.

TouchSense boards like those supplied in the kit can be ordered in production quantities, and field-proven, off-the-shelf industrial- or commercial-grade TouchSense processors are available from Immersion and licensed suppliers.

TouchSense actuators are optimized for generating high forces with small displacements. The number and size of the actuators you will need depends on the touchscreen's size, weight, and implementation.

### **Comprehensive, easy-to-use software toolkit**

The TouchSense Software Toolkit lets you select TouchSense tactile effects for your application. Three options help make programming fast and easy: a Windows ActiveX control, a cross-platform API in source code form, and support for custom interfaces.

The toolkit fully describes the process of adding tactile feedback to your software applications. Sample code illustrates how to add commands that direct TouchSense hardware components to produce the tactile effect you've selected. A palette of effects is supplied, enabling you to select the best tactile cues for your application. You choose whether to use the ActiveX control, the API, or write your own communications functions.

### **Windows ActiveX programming**

The toolkit's demonstration and sample programs use an integrated ActiveX control to communicate with the TouchSense control board. Details on using the ActiveX control in application programming are also included, and software toolkit licensees may use the control to facilitate their own Windows programming.

A sample application with source code – a button that plays a tactile effect when pressed and when released – shows how to use the ActiveX control for programming in Microsoft Visual C++, Microsoft Visual Basic .NET, and Macromedia Flash MX.

### **Cross-platform API**

The API, written in C, is provided in source code form. TouchSense Toolkit licensees may modify or use any or all of this code and port and adapt it to their target platforms. In addition, sample source code shows how to call the API functions.

### **Custom interface programming**

The programming guide describes the communication protocol, including serial and USB HID interfaces and messages.

### **TouchSense demonstrations**

The software toolkit includes three executable Windows demonstrations of push buttons, sliders, and other onscreen controls.

### **Effect selector**

The Effect Selector shows all of the TouchSense system's effects on a single screen, grouped by type: Pulse, Crisp, Smooth, Double Clicks, and Complex. This display lets you try out effect repetitions and pairs of push and release effects for your application.



With tactile feedback, touchscreen users know immediately whether their input was accepted.

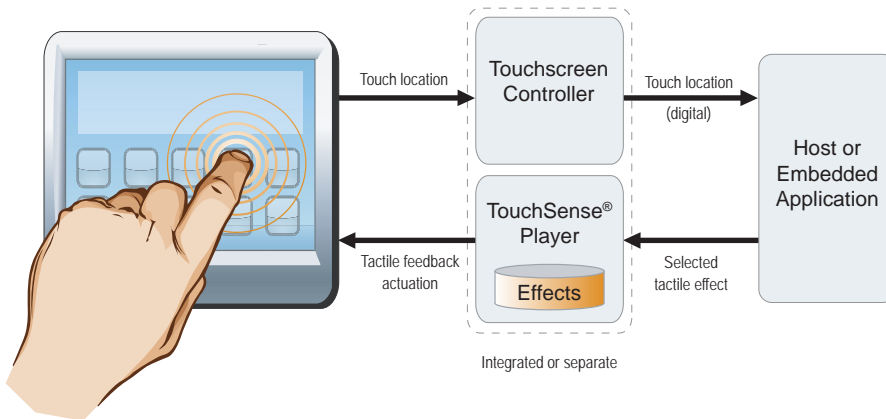
### System requirements for ActiveX and TouchSense demonstrations

- Operating system supported:
  - Microsoft Windows 2000 Professional
  - Microsoft Windows XP or Vista
- Intel Pentium III 800 MHz with 512 MB of RAM

### About TouchSense tactile feedback

With TouchSense tactile feedback designed into your product's touchscreen interface, graphical buttons feel real. They seem to press and release like mechanical buttons, turning traditionally passive touch interfaces into active displays that "come alive" to provide a greater connection with the user. TouchSense-enabled systems promote:

- A more familiar, engaging, satisfying experience
- Unmistakable confirmation for fast and accurate data entry
- Intuitive, natural, multisensory interactions that reflect a quality brand



When the user touches the screen, a signal is sent to the touchscreen controller, which sends the precise location where contact was made to the host application. The application commands the TouchSense controller to send a preprogrammed tactile effect to the TouchSense actuators, which vibrate the screen according to the effect's profile. TouchSense vibrotactile effects vary in duration, frequency, amplitude, and shape, allowing various onscreen objects to feel differently to the user.



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## 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

### Learn more

Adding Immersion TouchSense tactile feedback to industrial controls can increase user satisfaction, speed, and accuracy. For more information about adding tactile feedback to your touch-control interface, visit us at [www.immersion.com/products/touchsense-tactile-feedback/1000-series/](http://www.immersion.com/products/touchsense-tactile-feedback/1000-series/) or e-mail us [touch@immersion.com](mailto:touch@immersion.com).

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