Immersion Studio for Gaming
software development kit

- what's new?
- getting started
- technology
  - devices overview
  - tools and documents
  - tutorials
  - sample code
- community
- how to buy
- log in

Get your tools and resources here

Immersion has a suite of powerful APIs, useful design applications, helpful documentation, and step-by-step tutorials to help you move quickly from haptic design concepts to quickly integrating haptic content to all your software, web, and multimedia creative development projects.

- First learn about the different types of force feedback devices available, and choose the one most appropriate for your project.

- Read the Immersion TouchSense Design Fundamentals document for guidelines on designing touch effects.

- Then look through our complete lists of developer resources (tools, documents, and tutorials).

The tools & toolkits, tutorials, and sample code previewed in this section of the site are available through the purchase of the Immersion Studio® for Gaming Software Development Kit. Learn how to buy the Immersion Studio for Gaming Software Development Kit and join the developer community.

Should you have any questions as you begin to work with our tools, or if you don't find what you're looking for, please don't hesitate to email us the details.

Devices with that special touch...

A touch-enabled, or force feedback, device transfers forces to a user's hand or fingers under the direction of a computer. The ability of the device to play tactile effects depends on special hardware inside the device, in combination with software which directs what kinds of effects the device should play - not just any peripheral device will do.

Touch-enabled versions of the full gamut of computer peripherals are available for purchase at your local computer supplies store. Mice and trackballs made with Immersion TouchSense™ Technology let you touch your desktop, feel the web, and interact with your mouse-driven games like never before. If you're looking for an intense, realistic gaming experience, a force feedback gamepad, joystick, or steering wheel is probably the right choice.

View a list of touch-enabled mouse and trackball products for the PC platform.
View a list of touch-enabled joystick, gamepad, and wheel products for the PC platform.

View a list of touch-enabled game controllers for the Mac platform.
View a list of touch-enabled game controllers for the console platform.

Force feedback devices fall into several different categories, depending on what types of forces they can play, and the fidelity of these forces:

- The term **full force feedback** is used to refer to devices that apply sideways forces to your hand to resist your motion or give the impression of turbulence, recoil, impact, G-forces, or countless other phenomena. If the device can physically push on you, it's probably a full force feedback device. Many force feedback gaming devices fall into this category.

- The term **tactile feedback** is used to describe devices that play high-fidelity tactile sensations, but generally won't move or inhibit the movement of either the device or the hand holding it. A tactile feedback device can play a wide variety of distinguishable taps, textures, and vibration effects to communicate with the user and greatly enrich the computing or gaming experience. A number of pointing and gaming devices fall into this category.

- The term **rumble feedback** refers to devices that play low-fidelity shakes or rumbles. Rumble effects are generally turned on to correspond to high-action events in a game. This type of feedback is popular in a variety of basic game controllers, particularly gamepads.

The developer resources we provide are made to work with the full range of force feedback devices available on the market, but some tools and samples are more appropriate for some types of devices than others.

The legend below links colored icons to their corresponding device types. These icons will appear throughout this site to let you know what tools and samples you should be using to work with the device of your choice.

Brightly-colored icons represent devices that work best with a particular tool, sample, or application. Faded icons represent devices that will also work, but may not feel as good or be able to play all effects.

Device Type Legend

`TFM` = Tactile Feedback Mouse, e.g. Logitech iFeel Mouse

`T` = Tactile Feedback Trackball, e.g. Kensington Orbit 3D Trackball

`J` = Full Force Feedback Joystick, e.g. Microsoft Sidewinder Joystick

G = Full Force Feedback Gamepad, e.g. Gravis Xterminator Force Gamepad

W = Full Force Feedback Wheel, e.g. AVB Force Feedback Steering Wheel

FFM = Full Force Feedback Mouse, e.g. Logitech Wingman Force Feedback Mouse

R = Rumble Feedback Gamepad, e.g. InterAct HammerheadFX Gamepad

TFM **T** **J** **G** **W** **FFM** **R** = Sample or Application also works with these Device Types

Force Feedback Definitions: On this webpage, as well as in many of our developer tools and other documentation, the concept of "force feedback" - the addition of touch information to the human-computer interface - is referred to in a variety of ways. Immersion has developed a broad array of force feedback device technologies which feel and behave differently but which, ultimately, allow a user to interact with computer software in a physical, tactile way. Different names are used in an attempt to convey the many subtle differences in how these devices operate. Fundamentally, these varied naming conventions, including such words and phrases as "tactile feedback," "haptics," "full force feedback" "vibro-tactile," "rumble feedback,""touch-enabled," "touch-activated", and many more, all refer to different flavors of a single unified concept: the ability of a computer system, including both hardware and software, to communicate tactile content and information to a user across a broad range of applications. At Immersion we combine and unify this range of functionalities under our TouchSense™ mark.

[Corporate Home](#) | [Corporate](#) | [Solutions](#) | [Products](#) | [Corporate Contact](#) | [Legal](#) | [Privacy](#)

Put some feeling into your project

The following is a listing of Immersion APIs, design applications, and documentation, providing you a sneak peak at just what's out there to make your life easier in the haptic world. Tutorials, sample code, and complete documentation for haptic implementation are provided with the purchase of these products. Learn how to buy the Immersion Studio® for Gaming Software Development Kit and join the developer community.

The steps from A to Z.

- Decide what platform and device type you will be designing for.
- Read the Immersion TouchSense Design Fundamentals for guidelines on creating haptic effects.
- Use Immersion Studio to create touch effects and save them to Immersion Force Resource (IFR) files.
- Select a toolkit that best suits your project needs, whether this be C++, Flash, Director, etc.
- Use the Immersion Web ActiveX Control and Plugin or Immersion Foundation Classes runtime libraries for communication between the device and the haptic content you've created within the toolkit environments.

Tools and Toolkits

Introductory Documentation:
- Immersion TouchSense Design Fundamentals

Immersion Applications:
- Immersion Studio®
- Immersion Web Designer

Immersion Tools and Toolkits:

- [Immersion in Authorware Kit](#) •
- [Immersion in Director Kit](#) •
- [Immersion Dreamweaver Extension](#) •
- [Immersion in Flash Kit](#) •
- [Immersion Foundation Classes (IFC) SDK](#) •
- [Immersion in Shockwave Kit](#) •
- [Immersion TouchSense SDK for Java](#) •
- [Immersion Visual Basic Tutorial and Samples](#) •

Immersion Browser Plugin:

- [Immersion Web ActiveX Control and Plugin](#) •

Apple Documentation Links

- [Mac sample code](#) •
  •
- [December 2002 Mac OS X Developer Tools for Apple Developer Connection (ADC) members](#) •
- [(USB) for Mac OS](#) •
- [Mac OS USB v1.3.3](#) •
- [Sample code: HID Utilities Source : HID_Config_Utilities.c](#) •

[Corporate Home](#) | [Corporate](#) | [Solutions](#) | [Products](#) | [Corporate Contact](#) | [Legal](#) | [Privacy](#)

Take it one step at a time

Whatever you'd like to learn about working with TouchSense Technology, Immersion's developer tutorials give you a step-by-step process to follow. Once you've completed the steps, you will have mastered a particular touch-enabling task. Then take what you've learned, and apply it to your own project.

The tutorials focus on steps you would take for a project created on the PC platform. These tutorials are part of the on-line developer community. Gain access to this community with the purchase of the Immersion Studio® for Gaming Software Developer Kit. Learn how to buy the Immersion Studio for Gaming Software Development Kit and join the developer community.

Below are some of the topics covered within the toolkits as well as a guided tour of Immersion Studio.

Tutorials

- Immersion Studio

    Flash self guided tour

- TouchSense in C++ - IFC Tutorials
    the Immersion Foundation Classes (IFC) Reference
    Basic Force Feedback System
    Sound System Force Feedback
    Modular Force Feedback System
    Dynamic Force Feedback System

- TouchSense in Java Tutorial
    Button Interactions

Navigation (sidebar):

- what's new?
- getting started
- technology
    - devices overview
    - tools and documents
    - tutorials
    - sample code
- community
- how to buy
- log in

- TouchSense in Javascript - Web Tutorials
  Detecting the Immersion Web Plugin
  How to Use an Effect from an IFR file
  How to Add Sound
  How to Make A Periodic Effect
  How to Make a Texture Effect
  How to Make a Constant Force Effect
  How to Make a Damper
  How to Make An Ellipse
  How to Make An Enclosure
  How to Make a Grid
  How to Make a Spring Effect
  Changing the Direction of an Effect

- TouchSense in Visual Basic Tutorials
  Setting up your Visual Basic Development Environment
  How to Play an Effect from an .IFR Resource File
  Viewing Multiple Effects from within an IFR File
  Alternative Method of Instantiating the Immersion Web ActiveX
  Control

- TouchSense in Authorware Tutorial
  How to Add Tactile Effects in Authorware Using IFR Files

- TouchSense in Director Tutorials
  Which Touch Enabling Method to Use? -- IFR vs. ImmWeb Methods
  How to Add Tactile Effects in Director Using IFR Files
  How to Add Tactile Effects in Director Using ImmWeb Methods
  Touch Enabling a Cross-Platform Projector

- TouchSense in Flash Tutorials
  Detecting the Immersion Web Plugin
  How to Add Tactile Effects in Flash 4
  How to Add Tactile Effects in Flash 5
  How to Add Tactile Effects in Flash MX
  How to Add Tactile Effects to Videos in Flash 5 using Swideo

- TouchSense in Video

[Corporate Home](#) | [Corporate](#) | [Solutions](#) | [Products](#) | [Corporate Contact](#) | [Legal](#) | [Privacy](#)

Hello TouchSense sample code!

Learn by example.

This and other collections of sample code for java, javascripting, etc. are included in our toolkits. Preview them in the Tools & Docs Section.

If you're just looking for cool content, and don't care about the availability of associated source code, be sure to check out PC downloads of the Immersion corporate website.

Colored device icons indicate which device types work best and which ones work less well with each sample below. Click herefor an explanation of device types.

The Microsoft platform examples are a collection of Visual C++ sample programs. All examples come with source and runtime code.

J W

SpringOffset SpringOffset is a simple application that controls the position of a force feedback device.

platform: Mac OS X

J W

TestFFAPI TestFFAPI uses most Force Feedback API functions available in OS X. See how the system behaves given any sequence of API calls, including invalid sequences which generate error messages.

platform: Mac OS X

`TFM` `T` `FFM` `J` `G` `W` `R`

HelloIFC is a minimal application that initializes a TouchSense-enabled device, reads an effect from an IFR file, and plays the effect. This is a good place to start learning how TouchSense works.

platform: Microsoft

`J` `G` `W`

IFCDonuts shows how an application with existing Direct Input code can easily be modified to work with Immersion Foundation Classes and TouchSense gaming devices. Elements of the Microsoft DirectX SDK are required for this sample.

platform: Microsoft

`TFM` `T` `FFM` `J` `G` `W` `R`

IFC Test demonstrates the wide variety of effects available through the Immersion Foundation Classes. This is a great place to learn about the basic characteristics of each effect type, as well as which effect types your chosen force feedback device is able to play. Not all effects will play on all devices.
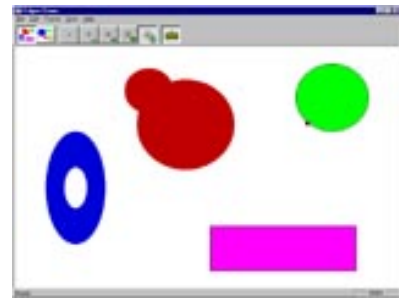
platform: Microsoft

`FFM` `TFM`

Immersion **Objects** demonstrates the use of enclosures, cursor clipping, inside effects, dampers, and grids in a graphical environment.

platform: Microsoft

`TFM` `T` `FFM`

Immersion **Puzzle** allows you to feel puzzle pieces as they snap into place, as well as other tactile characteristics of the puzzle.

platform: Microsoft

`FFM`

Connect the Dots demonstrates how TouchSense can greatly improve speed and accuracy when targeting objects on-screen.

platform: Microsoft

`FFM`

Immersion **Bezier** lets you feel the contours of a Bezier curve and demonstrates how TouchSense assists with targeting the curve's control points.
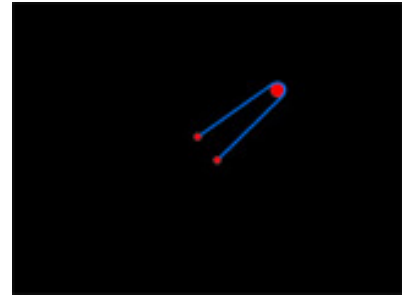
platform: Microsoft

FFM

Immersion **Slingshot** lets you experience the satisfying stretch and release of a real slingshot.

platform: Microsoft

W TFM T FFM J G R

Vroom lets you feel variations in the speed and intensity of a vibration as you "rev the engine." This sample is recommended for the force feedback wheel, but works with all devices.
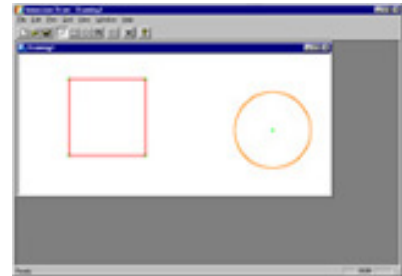
platform: Microsoft

FFM

Immersion **Draw** lets you feel shapes, grids, and control points in a simple drawing application.

platform: Microsoft

Corporate Home | Corporate | Solutions | Products | Corporate Contact | Legal | Privacy