

HOUSEHOLD GOODS

User Interfaces

Whaptics + Touchless Touch®

Whaptics is a unique infrared-based technology for creating mechanics-free touchless user interfaces, particularly gesture-swipe recognition and proximity sensing applications for everyday use. Designed, developed, and patented by H2i, Whaptics offers household goods manufacturers a compelling and cost-effective interface solution for a broad range of electronic devices and appliances.

■ Replacing switches, buttons, dials

Whaptics addresses an interesting paradox facing manufacturers today: differentiation is necessary to earn and maintain market share, but innovation and custom development can lead to costly implementations that may seem like gadgets to consumers. Even an attractive change can represent a negative point for consumers if it requires learning, excessive cost, or if it is perceived as non-durable.

On the other hand, the switches, controls, and interfaces used in common household goods can represent design elements that make a given product uniquely attractive. Whaptics was created to offer a technically solid and cost-effective alternative to existing low-tech and hi-tech interface options, enabling manufacturers to focus on design while respecting user expectations and hi-volume production requirements.

- Decorative goods with esthetic functional benefits
- Replaces mechanical solutions for numerous applications
- Intuitive operation with no learning curve

Whaptics gives your design team the freedom to implement unprecedented interfaces.

■ Respecting user expectations

When consumers buy common household goods and appliances, they are excited by innovation and sleek design, but the last thing they want to have to deal with is a "new" interface. Whaptics offers an interface proposal for the mass-market that respects the keep-it-simple approach. This solution gives manufacturers the flexibility to implement standard actions as well as new features in a fun, reliable, and wear-proof solution that doesn't require consumers to pay a higher cost for unnecessary gimmicks that won't stand the test of time.

■ Whaptics under glass, on steel

The Whaptics technology core can be implemented in many different types of household goods, from simple button-replacement solutions in lamps to more advanced multi-control black panel interfaces, such as those typically found in dishwashers. Manufacturers choose Whaptics to add a sleek and subtle touch to differentiate their products in a cost-effective manner.

For example, in a typical Whaptics implementation under glass, the display material contains no embedded or sandwiched electronic components. Nestled safely away from water, steam, and heat, the Whaptics optical sensor faces outwards to trace an invisible grid that detects the movement and position of a person's fingers over the surface, providing the expected natural and responsive experience.

- Cost-effective solution for mass production
- Effortless swipe movements replace pressure-sensitive pads, resistive, and capacitive solutions
- No worn zones from repeated touch patterns
- Completely waterproof, easily cleanable surface
- Withstands temperature swings without warping



Resistant to electromagnetic interference, high ambient temperatures, and water, Whaptics is the ideal technology choice for hydrotherapy products and cooking appliances.

Flexibility and style in the home

Every Whaptics implementation is a unique application that differentiates your products with compelling appeal in a competitive market. This mechanics-free solution is as well suited for cutting edge design in household goods such as washing machines and dishwashers, as it is for replacing on/off switches and dimmers on lamps. With Whaptics proximity sensing, an approaching hand can turn on a device and the swipe of a finger can dim the bulb. Whaptics enables manufacturers and designers to benefit from:

- Innovative opportunities to differentiate their brands and confirm their personalities
- Increased perceived value for users to match brand image, market, and commercial goals
- Shared electronic assembly with lamp's LED system – easier to integrate than mechanics!



Ideal for lighting solutions, Whaptics Touchless Touch adds esthetic hi-tech and compelling functionality to any lamp.

Creating winning designs together

At H2i, we work closely with customers from design to production to ensure an original and optimized solution that meets branding, marketing, and commercial goals. This includes support for:

- Elaborating detailed design specifications
- Developing proof-of-concept platforms for demonstrations, user-testing, and approvals
- Providing engineering assistance from prototyping to start of production and ramp-up
- Ongoing license agreements with long-term support, guarantees, and technology upgrades

About H2i

H2i designs and develops touchless user interface solutions for automotive, home appliance, and lighting applications. The company's infrared-based Whaptics Touchless Touch technology enables OEMs to provide an exciting, ultra-modern user experience with readily available off-the-shelf electronic components to ensure low cost and reliable supply options for manufacturing partners.



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Whaptics® advantages

- Cost-effective solution using readily available off-the-shelf and multi-source electronic components
- Mechanics-free touch interfaces on black-panels, mirrors, steel, and nearly any type of surface
- Robust infrared implementation for use in wet and warm environments as well as in direct sunlight
- Extremely precise definition in backlight scenario
- Combining proximity sensing and smooth touch detection



Create sleek panel interfaces that combine approach detection and swiping gesture control.

Key features

Touchless Touch® interfaces and displays

- Responsive
- Usable in direct sunlight
- No fingerprints
- Cost-effective
- Easy to use, zero learning phase
- Extremely flexible
- EMC compliance
- Touch on metal, steel, glass, and more

Specifications

- Modular detection area: from 80 x 80 mm
- Resolution: 100 points/cm (254 dpi)
- Absolute precision: ± 2 mm on 90% of the surface (± 5 mm worst-case)
- Reaction time = 20 ms
- Tracking period = 10 ms
- Resists high ambient temperatures (-40°C to +85°C)
- For use with 8-bit microcontroller
- Respects EMC requirements

