

# PLANAR SCATTER DETECTION TECHNOLOGY



# TRUE MULTI-TOUCH WITH SUPREME PERFORMANCE

FlatFrog's multi-touch technology, called Planar Scatter Detection (PSD), is an optical in-glass technology with unprecedented performance through advanced opto-mechanics and signal processing. PSD is setting a new standard for true multi-touch technologies.

- Novel optical solution enabling extreme update frequencies and resolution
- Utilizes transparent medium waveguide properties, not limited to a single material
- Embedded system processing with digital signal processing support for a compact solution



*FlatFrog Multitouch 3200 is the first product utilizing the PSD technology, giving it supreme true multi-touch performance.*

## PSD ENABLES EXCITING FUTURE MULTI-TOUCH SPECIFICATIONS

### PEN INPUT

The high accuracy and precision of the PSD technology allows for passive and active pen input implementations.

### GLASS OR PLASTICS

The optically based PSD technology can operate in both glass and plastic substrates.

### OBJECT SHAPE RECOGNITION

PSD technology can recreate what is happening on the surface of the screen in minute detail, providing the possibility to recognize objects and shapes to enable for example palm rejection.

### CURVED SURFACES

PSD works not only in different materials but also on curved surfaces, making spectacular and futuristic applications possible.

### SIZES FROM 3" TO MORE THAN 100"

The technology can be scaled to support anything from 3" to 100"+ displays, covering everything from smartphones, all-in-one computers to large interactive whiteboards and tables.

### READY FOR WINDOWS 8

With PSD, both the 32" FlatFrog Multitouch 3200 and other sizes will surpass the stringent touch requirements set out by Microsoft for their coming operating system, ensuring smooth touch interaction for many years to come.

### LOW COST AND LOW POWER

The PSD technology is ideal for consumer electronics products with both disruptive price points at high volumes and low power consumption while maintaining high performance and perfect optical clarity.

### DESIGNED FOR RAPID PRODUCT DEVELOPMENT

FlatFrog's developer framework and open API are developed to facilitate software porting to the multi-touch environment. All platforms are supported, such as Windows, Linux or OS X.

### FLUSH AND SIMPLE INTEGRATION

The technology is designed to support simple and slim integration with a completely flush surface, ideal for multi-touch based slates and computers.

### RUGGED DESIGN

FlatFrog's system is developed to perform even in harsh environments. The robust physical characteristics maximize resistance while advanced filtering techniques ensure continued multi-touch performance despite eventual dust, liquids, scratches or reasonable physical disturbances.

## HOW PSD WORKS

1. Light is injected into the waveguide
2. The light travels via TIR – Total Internal Reflection within the waveguide
3. The light wave is disturbed by an object (e.g. Finger) touching the waveguide (FTIR – Frustrated Total Internal Reflection)
4. Light is scattered from the touch point but since only a fraction of the light travelling within the waveguide is scattered a multitude of touches may be present on a given line
5. The remaining light is detected at the edge of the waveguide
6. Very advanced algorithms calculate the positions of the touching objects using the detected light.



**FLATFROG LABORATORIES**

FlatFrog bring to life the exciting new world of multi-touch computing and applications. Designed from inception for volume production, our patented technologies enable unmatched in-glass multi-touch performance for displays in a slim form factor.

