

# The Moverio BT-100, Binocular, See-through Smart Glasses

November 2011



#### Liquid crystal panel

Type: High-temperature polysilicon TFT

Pixels: 0.52" wide panel (16:9)

Size: 960 x RGB x 540 (qHD)

Perceived image size: 320" at 20 meters

Color depth: 24-bit color (16.7 million colors)

Platform: Android™ 2.2

Memory: 1 GB internal user memory

Battery life: Approx. 6 hours

(continuous playback of movie file)

## Product Features

The Moverio BT-100, released on November 25, 2011, were the world's first standalone binocular consumer smart glasses to offer audio-visual content via wireless connectivity\*. Worn like ordinary eyeglasses, they allowed the wearer to enjoy movies, music, web content, and more on a perceived big screen, virtually anywhere and at any time.

Moverio uses unique optics and high-definition microdisplays to project content onto a "screen" directly in front of you. The see-through lenses enable text and graphics to be overlaid on objects you're seeing in the real world. You perceive the images floating before your eyes to be larger the farther away you look. (If you're looking at a spot 20 meters ahead, for example, the image will appear to be equivalent to a 320-inch screen.) Based on the Android™ 2.2 platform, these smart glasses have intuitive controls that are familiar to users of smartphones and tablet PCs.

\* Source: Epson research.

## Story Behind the Creation

Epson has become the world's leading projector manufacturer by providing big-screen imaging products to customers around the world. The company is now leveraging its storehouse of core technologies to pioneer new areas of business and create new ways to communicate visual information on a large screen.

To achieve innovative smart glasses that would enable you to enjoy large, see-through images, Epson had to draw together and further develop core technologies that originated primarily in the projector businesses. Tiny, high-definition Ultimicron high-temperature polysilicon TFT LCD panels were used as the core device for displaying images. These unique microdisplays are widely used by camera manufacturers as electronic viewfinders in digital cameras. Epson also developed an innovative new light guide by fully tapping into its advanced optical engineering and manufacturing technologies. The light guide was one of the keys to achieving lightweight smart glasses with a smaller form factor.

The "Moverio" product brand name was coined by combining the words "Mover" and "IO." "Mover," which signifies both moving and movies, was chosen because we hoped that people would enjoy movies and other big-screen visual entertainment both at home and on the move. A mover can also mean a powerful and influential person, a driving force, or a person who is energetic and ambitious, so the name also asserts Epson's resolve to be a market mover, a trendsetter, and a driver of market expansion. Meanwhile, "IO," which stands for "input/output," implies that these smart glasses act as an interface between the public and your private world.

## Reception and Market Impact

Moverio BT-100 smart glasses are the product of a corporate culture that is defined by a long tradition of creativity and challenge, and technology that has been ceaselessly advanced and improved. Epson promised to deliver value in the form of a new way to enjoy large-screen images, and the completely new visual experience surprised the world. The display and see-through images were unique features that drew considerable interest from companies in industries as far-flung as software development, tourism, and logistics, and Epson has forged partnerships with other companies to develop business and commercial applications.

Epson continued to evolve Moverio technology and, in 2014, announced a second-generation Moverio, the BT-200. The BT-200 were widely recognized for the innovativeness of their design and engineering. The Consumer Electronics Association honored Epson with a 2014 CES Innovations Award. Meanwhile, at CEATEC, Japan's largest IT and electronics exhibit and conference, the BT-200 was selected for a Grand Prix at the 2014 CEATEC Awards, in the Lifestyle and Innovation Category.

(Written in August 2015)