

Smart Glasses: Component and Technology Markets: 2014

<https://marketpublishers.com/r/S52DF8D3561EN.html>

Date: September 2014

Pages: 0

Price: US\$ 3,295.00 (Single User License)

ID: S52DF8D3561EN

Abstracts

Smart Glasses are spectacles embodying the wearable computing concept and either (1) allowing people to see better or (2) acting as an enabling technology for augmented reality (AR). Although currently at an early stage of development, smart glasses have been touted as the next stage of mobile communications – a platform that could eventually replace smartphones. Although Google Glass is currently the poster child for smart glasses at the present time, there may be as many as 30 firms offering smart glasses – or planning to do so – at the present time.

These products differ significantly in their price points and in intended end-user markets. They also embody very different optical technologies, human-computer interfaces and system capabilities. As a result, NanoMarkets believes that the surge of interest in smart glasses will lead to new business opportunities in the optical components, sensor and semiconductor sectors. While smart glasses face many challenges as commercial products, their success could mean billions of dollars in new revenues for components and sub-systems makers.

Many of the new technologies are being developed by the smart glass firms themselves, but other specialist firms are emerging to provide specialized optical subsystems. NanoMarkets believes, that as the smart glasses business matures opportunities for technology and components start ups – some of them will grow to be large businesses, others will fall by the wayside.

The objective of this report is to assess the key technologies that will be used in smart glasses and to forecasts their commercial potential over the next eight years. The report also predicts who the leading firms will be in this emerging space and how their product/market strategies are evolving.

The report builds on the NanoMarkets' team in the optical components, sensor and display sectors, where NanoMarkets and its sister companies have been providing industry analysis for many years. The coverage in this report begins with an assessment of the various optical subsystems that are being deployed in smart glasses and then discusses how smart glasses technology and the latest human-computer interfaces can come together to create viable businesses. Finally, the report takes a look at how smart glasses can generate significant new demand for electronic components and semiconductor chips.

We think this report will be important to business development and marketing executives in the optical component, sensor and semiconductor industries, as well as for smart glass firms themselves.

In fact, while some smart glasses, are completely functional as standalone products, most manufacturers recommend synchronization with cellular handsets thereby enabling enhanced functionality such as access to text messages, etc. Competition in this space is often through embedded technology such as voice commands, sophistication and ubiquity of cameras and activity tracking, etc.

Contents

EXECUTIVE SUMMARY

E.1 Why Smart Glasses Are Exciting for Technology Providers

E.1.1 Market Drivers for Smart Glasses: Risky Business

E.2 Assessment of Technology and Component Opportunities in the Smart Glasses Space

E.2.1 Optical Components and Subsystems

E.2.2 Display Industry Implications

E.2.3 Human-Computer Interface Developments

E.2.4 Sensor Industry

E.2.5 Semiconductor Industry, Sensor Fusion and Smart Glasses

E.3 Eight Likely Influential OEMs and Technology Suppliers in the Smart Glasses Sector

E.3.1 Epson

E.3.2 Google

E.3.3 Himax

E.3.4 Kopin

E.3.5 Microsoft

E.3.6 Samsung

E.3.7 Sony

E.3.8 Thalmic Labs

E.3.9 Vuzix (United States)

E.4 Summary of Eight-Year Forecasts of Smart Glasses Components and Subsystems

CHAPTER ONE: INTRODUCTION

1.1 Background to this Report

1.1.1 Optical Subsystems: First in the Value Chain

1.1.2 Sensors for Smart Glasses: Volume Opportunity and Beyond

1.2 Objective and Scope of this Report

1.3 Methodology of this Report

1.4 Plan of this Report

CHAPTER TWO: MARKET REQUIREMENTS: OPTICAL TECHNOLOGIES, COMPONENTS AND SUBSYSTEMS FOR SMART GLASSES

2.1 Market Expectations and Forecasts for the Smart Glasses Market

- 2.2 Market and Design Requirements for Smart Glasses
- 2.3 Optical Alternatives for Smart Glasses: Combiners/Recombiners
 - 2.3.1 Types/Classifications of Combiners for Smart Glasses
 - 2.3.2 Manufacturing Considerations for Optical Subsystems used in Smart Glasses
- 2.4 Optical Subsystems
 - 2.4.1 Reflective Lightguides: Google, Epson and Optinvent
- 2.5 Curved Mirror: Vuzix, Olympus and Laster
- 2.6 Diffractive Waveguides: Vuzix
 - 2.6.1 Inherent Problems with Diffractive Waveguides
- 2.7 Holograms: Sony and Konica
 - 2.7.1 The Need for Three Waveguides
- 2.8 Polarized Waveguide: Lumus
- 2.9 Switchable Waveguides
- 2.10 Virtual Retinal Displays
- 2.11 Notes on Camera and Display Technology for Smart Glasses
- 2.12 Eight-Year Forecast of Optical Technologies
- 2.13 Key Points from this Chapter

CHAPTER THREE: HUMAN-COMPUTER INTERFACES FOR SMART GLASSES

- 3.1 HCI Options for Smart Glasses
- 3.2 Touch-based HCIs in Smart Glasses: Now but Not the Future
 - 3.2.1 Touch-based HCIs in Smart Glasses: Eight-Year Forecast
- 3.3 Voice Recognition: A Natural Interface
 - 3.3.1 A Note of Speech-Text Conversion
 - 3.3.2 Voice-based HCIs in Smart Glasses: Eight-Year Forecast
- 3.4 Gesture Recognition
 - 3.4.1 Improvements Needed Before Gestural Recognition Can Succeed in Smart Glasses
 - 3.4.2 Moving Forward With Gestural Control
 - 3.4.3 Gestural Recognition HCIs in Smart Glasses: Eight-Year Forecast
- 3.5 Brain-computer Interfaces
 - 3.5.1 BCIs in Smart Glasses: Eight-Year Forecast
- 3.6 Eight-Year Forecast of Human-Computer Interfaces and Related Components for Smart Glasses
- 3.7 Key Points from this Chapter

CHAPTER FOUR: MAJOR SMART GLASSES VENDORS AND SUBSYSTEMS MAKERS: TECHNOLOGY AND PRODUCT STRATEGIES

- 4.1 Introduction
- 4.2 APX Labs (United States)
 - 4.2.1 Impact on Smart Glasses Technology: APX's Hardware Platforms
 - 4.2.2 The View from APX on HCIs
 - 4.2.3 APX on the Future of Smart Glasses
- 4.3 Atheer Labs (United States)
 - 4.3.1 Future of Smart Consumer Glasses
 - 4.3.2 Atheer and Product Design Strategy
- 4.4 Brilliant Labs (Japan)
 - 4.4.1 Product Plans: Mirama One
 - 4.4.2 Mirama Prototypes and Development Kits
- 4.5 BuBBles Lab (Romania)
- 4.6 Canon (Japan)
 - 4.6.1 Technology Deployed
- 4.7 Epson (Japan)
 - 4.7.1 Anticipated Technology Improvements
- 4.8 EyeTap (Canada)
- 4.9 GlassUp (Italy)
 - 4.9.1 Financing Issues
- 4.10 Google (United States)
 - 4.10.1 Current and Future Display Technologies
 - 4.10.2 Building a Google Glass Ecosystem
- 4.11 Innovega (United States)
 - 4.11.1 Innovega's Contact Lens Technology
 - 4.11.2 Future Plans and Strategies
- 4.12 Konica Minolta (Japan)
- 4.13 LaForge Optical (United States)
 - 4.13.1 Icis Product Evolution
 - 4.13.2 Financing of La Forge
- 4.14 Kopin (United States)
 - 4.14.1 Golden-I HMD
 - 4.14.2 Pupil
- 4.15 Laster Technologies (France)
- 4.16 Lumus (Israel)
 - 4.16.1 Technology
 - 4.16.2 DK-40 Development Kit
 - 4.16.3 PD-18 Commercial/Industry Display Module
- 4.17 Luxottica (Italy)

- 4.17.1 Partnership with Google
- 4.17.2 Partnership with Recon
- 4.18 Meta (United States)
 - 4.18.1 Product Development
- 4.19 Microsoft (United States)
- 4.20 Optinvent (France)
 - 4.20.1 Clear Vu and ORA
- 4.21 Pivothead (United States)
 - 4.21.1 SMART Glasses
- 4.22 Recon Instruments (Canada)
 - 4.22.1 Snow
 - 4.22.2 Jet
- 4.23 Samsung (Korea)
 - 4.23.1 Product Design
- 4.24 SixthSense (United States)
 - 4.24.1 SixthSense Technology
- 4.25 Sony (Japan)
 - 4.25.1 SmartEyeglass
- 4.26 Technical Illusions (United States)
 - 4.26.1 castAR
- 4.27 Thalmic Labs (Canada)
 - 4.27.1 Myo
 - 4.27.2 Use of Myo with Smart Glasses
- 4.28 Vergence Labs (United States)
 - 4.28.1 Epiphany Eyewear Technology and Capabilities
- 4.29 Vuzix (United States)
 - 4.29.1 Investment and Partnerships
 - 4.29.2 Vuzix Product Line and Technology Profile
- 4.30 WeON (Spain)
- 4.31 XOEye (United States)
 - 4.31.1 XOne

ACRONYMS AND ABBREVIATIONS USED IN THIS REPORT

About

ABOUT THE AUTHOR

List Of Exhibits

LIST OF EXHIBITS

- Exhibit E-1: Smart Glasses Are Distinct Product Category
- Exhibit E-2: Alternative Scenarios for Smart Glasses Market
- Exhibit E-3: Optical Subsystem Technologies for Smart Glasses
- Exhibit E-4: Human-Computer Interface Opportunities for Smart Glasses
- Exhibit E-5: Summary of Eight-Year Market Forecast for Optical Subsystem Technologies Used in Smart Glasses (\$ Millions)
- Exhibit E-6: Summary of Eight-Year Market Forecasts for Human-Computer Interface Technologies Used in Smart Glasses (\$ Millions)
- Exhibit 1-1: Two Types of Opportunity for Components and Subsystems Makers in the Smart Glasses Space
- Exhibit 2-1: Eight-Year Forecast of Total Smart Glasses Market
- Exhibit 2-2: Technical and Market Requirements for Smart Glasses
- Exhibit 2-3: Advantages and Disadvantages of Reflective Lightguide Technology for Smart Glasses
- Exhibit 2-4: Expected Evolution of the Gestural Control Business
- Exhibit 2-5: Eight-Year Forecast of Market Share by Optical Technology for Smart Glasses, Percent Share of the Market
- Exhibit 2-6: Eight-Year Forecast of Optical Technology Costs for Smart Glasses (\$)
- Exhibit 2-7: Eight-Year Forecast of Optical Technology Markets for Smart Glasses
- Exhibit 3-1: Eight-Year Forecast of Touch Panels Used in Smart Glasses
- Exhibit 3-2: Eight-Year Forecast of Voice Recognition Used in Smart Glasses
- Exhibit 3-3: Eight-Year Forecast of Speech-Text Conversion Used in Smart Glasses
- Exhibit 3-4: Approaches to Tracking Motion and Gestures
- Exhibit 3-5: Selected Firms Developing Gestural Control for Smart Glasses
- Exhibit 3-6: Eight-Year Forecast of Eye Tracking and Other Gestural Recognition Used in Smart Glasses
- Exhibit 3-7: Eight-Year Forecast of BCIs Used in Smart Glasses
- Exhibit 3-8: Summary of Eight-Year Market Forecasts for Human-Computer Interface Technologies Used in Smart Glasses (\$ Millions)
- Exhibit 4-1: Summary of Components and Suppliers Used by Epson Moverio BT-200
- Exhibit 4-2: Summary of Components and Suppliers Used by Google Glass
- Exhibit 4-3: Microsoft Chronology in the Smart Glasses Market
- Exhibit 4-4: Smart Glasses Developments at Samsung
- Exhibit 4-5: Technology Profile of the Sony Smart Eye glass
- Exhibit 4-6: Technology Profile of the Vuzix M

I would like to order

Product name: Smart Glasses: Component and Technology Markets: 2014

Product link: <https://marketpublishers.com/r/S52DF8D3561EN.html>

Price: US\$ 3,295.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/S52DF8D3561EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970