

# **MEMS Gyroscopes: Market Research Report**

<https://marketpublishers.com/r/M37072732CBEN.html>

Date: January 2015

Pages: 156

Price: US\$ 4,500.00 (Single User License)

ID: M37072732CBEN

## **Abstracts**

This report analyzes the worldwide markets for MEMS Gyroscopes in US\$ Million. The Global market is further analyzed by the following Applications: Automotive, Consumer Electronics, and Others. The report provides separate comprehensive analytics for the US, Canada, Japan, Europe, Asia-Pacific, and Rest of World. Annual estimates and forecasts are provided for the period 2013 through 2020. Market data and analytics are derived from primary and secondary research. Company profiles are primarily based on public domain information including company URLs. The report profiles 33 companies including many key and niche players such as -

Analog Devices, Inc.

Bosch Sensortec GmbH

Colibrys Ltd.

Epson Electronics America, Inc.

Freescale Semiconductor, Inc.

## Contents

### I. INTRODUCTION, METHODOLOGY & PRODUCT DEFINITIONS

Study Reliability and Reporting Limitations

Disclaimers

Data Interpretation & Reporting Level

Quantitative Techniques & Analytics

Product Definitions and Scope of Study

### II. EXECUTIVE SUMMARY

#### 1. MARKET OUTLOOK

Microelectromechanical Systems (MEMS) – An Introduction

**Table 1.** World Market for MEMS Sensors (2014 & 2016): Percentage Breakdown of Sales for Inertial Combos, Gyroscopes, Accelerometers and Other MEMS Sensors (includes corresponding Graph/Chart)

MEMS Inertial Sensors – A Prelude

A Glance at Recent Developments in MEMS Inertial Sensors Market

MEMS Gyroscopes – Market Outlook

Consumer Electronics Spearhead Modern Day Use of Gyroscopes

Current & Future Analysis

#### 2. INDUSTRY OVERVIEW

MEMS Gyroscopes: Significance and Applications

Dual-Axis MEMS Gyroscope – A Remarkable Innovation

Growing Prospects for 3-Axis Gyroscopes

FOGs and RLGs Lead High-Performance Gyroscopes Market

MEMS Gyroscopes Wrest Market Share from FOGs

Combination Sensors Alter Market Dynamics

Growing Focus on Integration Spurs Significant Prospects for Inertial Combo Sensors

Innovations Continue to Emerge in Combined MEMS Gyroscopes Space

Novel MEMS Gyroscope Aids Use in Single-Channel Damping

Innovative Control Solution Promises Compensation of Fabrication Errors  
BAW Gyroscope Sensors – A Novel Technology with Tremendous Promise  
Angular Rate MEMS Gyroscopes: A Definite Advancement over Typical MEMS Gyroscopes  
A Note on Key Applications  
GPDS in Shoe Insoles  
GPS Sensors  
Inertial Measurement Unit  
Focus on Select Recent Innovations in Inertial Sensors  
Integration Aims at Saving Cost and Minimizing Size of MEMS Inertial Sensors  
E-Compass  
KMX61G Combination Sensor by Kionix  
Gimballed Gyro-stabilized Platforms  
Fluid-suspended Gyro-stabilized Platforms  
Strap-down Systems  
Motion-based Alignment  
Vibrating Gyros  
Hemispherical Resonator Gyros  
Timing & Inertial Measurement Unit (TIMU) Sensors  
Significant R&D Projects Underway in Gyroscopes Market  
Design Challenges in MEMS Gyroscopes  
High Performance/Low Cost Gyroscopes  
Competitive Landscape  
MEMS Gyroscope – A Focus on Activity of Select Players  
InvenSense Bets on Consumer Electronics for MEMS Gyroscopes  
Nasiri-Fabrication Platform – The Basis for InvenSense's Technology  
Suitability of Nasiri-Fabrication Platform for Gyroscope Design

### **3. END-USE MARKET ANALYSIS**

Focus on Key End-Use Applications  
Automotive  
Consumer Electronics  
Industrial  
Military  
From Auto to Electronics – The Journey of MEMS Gyroscopes in Brief  
MEMS Gyroscopes – A Long History in Automotive Applications  
Consumer Electronics – A Promising Market for Motion Sensors  
Handheld Electronics – A Growing Market for MEMS Gyroscopes

MEMS Inertial Sensors Make Rapid Inroads into Smartphones

Motion Processing Technology Leads to New Functionalities in Consumer Products

Motion Processing Finds Application in Camera and Camcorders

Aerospace & Defense – Key Niche Sectors for IMUs

Attitude and Heading Reference System - Delivering Enhanced Functionality in Aircraft

Gyroscope-based Device for Tremor Sensing in Upper Limb – A Novel Application in Healthcare

New Generation of MEMS Inertial Sensors Enable Compelling Applications

Novel Applications Demand Miniaturized Gyroscopes

## **4. PRODUCT OVERVIEW**

Defining Gyroscope

Working of a Gyroscope

A Historic Perspective of Gyroscopes

Types of Gyroscopes

MEMS Gyroscope

Fiber Optic Gyroscope (FOG)

Hemispherical Resonator Gyroscope (HRG)

Gyrost

Dynamically Tuned Gyroscope (DTG)

Vibrating Structure Gyroscope (VSG)

Ring Laser Gyroscope (RLG)

London Moment Gyroscope

Applications of Gyroscopes

Spacecraft Orientation

Automotive Industry

Photography

Entertainment

Hobbies

Industrial Robotics

Additional Applications

MEMS Gyroscopes

Types of MEMS Gyroscopes

Draper Tuning Fork Gyroscope

Piezoelectric Plate Gyroscope

Vibrating-Wheel Gyroscopes

Wine Glass Resonator Gyroscopes

Foucault Pendulum Gyroscopes

Micromachined Gyroscope Technology— Operating Principles/Specifications  
MEMS Inertial Sensors  
Key MEMS Inertial Sensor Types

## **5. PRODUCT INNOVATIONS/INTRODUCTIONS**

InvenSense Launches New 6-Axis Inertial Sensor for Use in Consumer Electronics  
Colibrys Rolls Out Vibrational Gyroscope  
InvenSense Launches 6-Axis SoC with Enhanced Digital Motion Processor  
Bosch Sensortec Rolls Out MEMS Sensors for Android Smart Phones  
Murata Rolls Out Very High Stability Combined Accelerometer and Gyroscope Sensors  
Qualtre Launches New BAW MEMS Gyroscopes  
STMicroelectronics Introduces Always-On 6-Axis Combination Sensor  
Analog Devices Introduces High-Temperature MEMS Gyroscope for Oil & Gas Industry  
mCube Rolls Out Complete 9DoF Software-Based Gyroscope for Android Mobile Devices, iGyro  
InvenSense Launches Integrated 7-Axis Sensor  
STMicroelectronics Rolls Out New Gyroscope for Optical Image Stabilization Application  
STMicroelectronics Launches New Gyroscopes for Cameras and Mobiles

## **6. RECENT INDUSTRY ACTIVITY**

Alps Electric Inks Agreement with Qualtre for Sales of Gyroscopes  
Qualtre Bags Strategic Investments  
Sagem Acquires Colibrys

## **7. FOCUS ON SELECT PLAYERS**

Analog Devices, Inc. (US)  
Bosch Sensortec GmbH (Germany)  
Colibrys Ltd. (Switzerland)  
Epson Electronics America, Inc. (US)  
Freescale Semiconductor, Inc. (US)  
InvenSense Inc. (US)  
Kionix, Inc. (US)  
LORD Corporation MicroStrain Sensing Systems (US)  
Maxim Integrated Products Inc. (US)  
MEMSIC, Inc. (US)

Moog Inc. (US)  
Murata Manufacturing Company, Ltd. (Japan)  
Panasonic Corporation (Japan)  
Sensoror AS (Norway)  
Silicon Sensing Systems Ltd. (UK)  
STMicroelectronics (Switzerland)  
Systron Donner Inertial (US)  
Texas Instruments, Inc. (US)  
VectorNav Technologies (US)

## 8. GLOBAL MARKET PERSPECTIVE

### Market by Geographic Region

**Table 2.** World Recent Past, Current & Future Analysis for MEMS Gyroscopes by Geographic Region - US, Canada, Japan, Europe, Asia-Pacific (excluding Japan) and Rest of World Markets Independently Analyzed with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

**Table 3.** World 8-Year Perspective for MEMS Gyroscopes by Geographic Region - Percentage Breakdown of Revenues for US, Canada, Japan, Europe, Asia-Pacific (excluding Japan) and Rest of World Markets for Years 2013, 2015 & 2020 (includes corresponding Graph/Chart)

### Market by Application

**Table 4.** World Recent Past, Current & Future Analysis for MEMS Gyroscopes by End-Use Application - Automotive, Consumer Electronics and Others Markets Independently Analyzed with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

**Table 5.** World 8-Year Perspective for MEMS Gyroscopes by End-use Application - Percentage Breakdown of Revenues for Automotive, Consumer Electronics and Others Markets for Years 2013, 2015 & 2020 (includes corresponding Graph/Chart)

## III. MARKET

## 1. THE UNITED STATES

### A. Market Analysis

Current & Future Analysis

Sensors - Important Part of Automobiles

Product Launches

Strategic Corporate Developments

Key Players

### B. Market Analytics

**Table 6.** US Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 2. CANADA

### A. Market Analysis

Current & Future Analysis

Canadian Sensor Industry – A Brief Note

### B. Market Analytics

**Table 7.** Canadian Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 3. JAPAN

### A. Market Analysis

Current & Future Analysis

Product Launch

Key Players

### B. Market Analytics

**Table 8.** Japanese Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020

(includes corresponding Graph/Chart)

## 4. EUROPE

Market Analysis

**Table 9.** European Recent Past, Current & Future Analysis for MEMS Gyroscopes by Geographic Region - France, Germany, Italy, UK, Spain and Rest of Europe Markets Independently Analyzed with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

**Table 10.** European 8-Year Perspective for MEMS Gyroscopes by Geographic Region - Percentage Breakdown of Revenues for France, Germany, Italy, UK, Spain and Rest of Europe Markets for Years 2013, 2015 & 2020 (includes corresponding Graph/Chart)

### 4A. FRANCE

Market Analysis

**Table 11.** French Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

### 4B. GERMANY

A. Market Analysis

Current & Future Analysis

German Sensor Industry – An Overview

Market and Technology Trends

Product Launch

Key Player

B. Market Analytics

**Table 12.** German Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)



## 4C. ITALY

Market Analysis

**Table 13.** Italian Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 4D. THE UNITED KINGDOM

A. Market Analysis

Current & Future Analysis

Key Player

B. Market Analytics

**Table 14.** UK Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 4E. SPAIN

Market Analysis

**Table 15.** Spanish Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 4F. REST OF EUROPE

A. Market Analysis

Current & Future Analysis

Product Launches

Strategic Corporate Development

Key Players

B. Market Analytics

**Table 16.** Rest of Europe Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## 5. ASIA-PACIFIC

### A. Market Analysis

#### Current & Future Analysis

Asia-Pacific - Fastest Growing Sensors Market Worldwide

Huge Automotive Manufacturing Activity Makes Asia-Pacific a Lucrative Market for Sensors

An Overview of MEMS Inertial Sensors

India - MEMS Inertial Sensors in Automotive Electronics Attracts Attention of Foreign Players

### B. Market Analytics

**Table 17.** Asia-Pacific Recent Past, Current & Future Analysis for MEMS Gyroscopes by Geographic Region - China, South Korea, Taiwan and Rest of Asia-Pacific Markets Independently Analyzed with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

**Table 18.** Asia-Pacific 8-Year Perspective for MEMS Gyroscopes by Geographic Region - Percentage Breakdown of Revenues for China, South Korea, Taiwan and Rest of Asia-Pacific Markets for Years 2013, 2015 & 2020 (includes corresponding Graph/Chart)

## 6. REST OF WORLD

### Market Analysis

**Table 19.** Rest of World Recent Past, Current & Future Analysis for MEMS Gyroscopes Market with Annual Revenue Figures in US\$ Million for Years 2013 through 2020 (includes corresponding Graph/Chart)

## IV. COMPETITIVE LANDSCAPE

Total Companies Profiled: 33 (including Divisions/Subsidiaries - 34)

The United States (21)

Japan (2)

Europe (10)

France (3)

Germany (1)

The United Kingdom (1)

Rest of Europe (5)

Asia-Pacific (Excluding Japan) (1)

## I would like to order

Product name: MEMS Gyroscopes: Market Research Report

Product link: <https://marketpublishers.com/r/M37072732CBEN.html>

Price: US\$ 4,500.00 (Single User License / Electronic Delivery)

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

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/M37072732CBEN.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