



3D Motion Sensor Developer's Kit MDP-A3U9S-DK

● Handling instructions for 3D Motion Sensor Developer's Kit ●

3D Motion Sensor Developer's Kit (MDP-A3U9S-DK) is a product to be used for evaluating 3D Motion Sensor and designing/developing product using 3D Motion Sensor. Do not utilize otherwise. Please be advised that NEC TOKIN accepts no responsibility for the performance of the products that utilizes the sensor included in this developer's kit. Please consult with NEC TOKIN when manufacturing and selling such products.

Outline

This 3D motion sensor with a ceramic gyro, acceleration sensor and terrestrial magnetism sensor, detects the 3-dimensional posture angle of the device on which it is installed.

By connecting to personal computer using USB interface, this unit realizes easy and real time measurement of 3-dimensional posture angle. Its small volume (20×20×15 mm typ.) enables installation in small spaces.

Developer's Kit MDP-A3U9S-DK is a package for developing application software and hardware. The kit includes sensor unit, dedicated USB cable + dedicated device driver and support CD-ROM disk including demonstration software. With this kit, it enables connection of 3D motion sensor to personal computer to perform trials and evaluation.

Features

- Compact size and light weight
- High response speed
- Possibility of installation in desired direction
- Possibility of full range measurement (yaw angle: $\pm 180^\circ$, pitch angle: $\pm 90^\circ$, and roll angle: $\pm 180^\circ$)
- No need of adjustment (readjustment necessary depending on the environment for use)

Options

- UART output
- *Please consult NEC TOKIN beforehand, when ordering products with these options



Sensor Unit



Developer's Kit

Applications

- Tracker for head mounted display
- Motion capture
- Attitude angle detection of mobile object

Kit Composition

- 3D Motion Sensor MDP-A3U9S unit
- Dedicated USB cable
- Cable connection board
- Support disk (CD-ROM)



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact NEC TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

3D Motion Sensor Developer's Kit MDP-A3U9S-DK

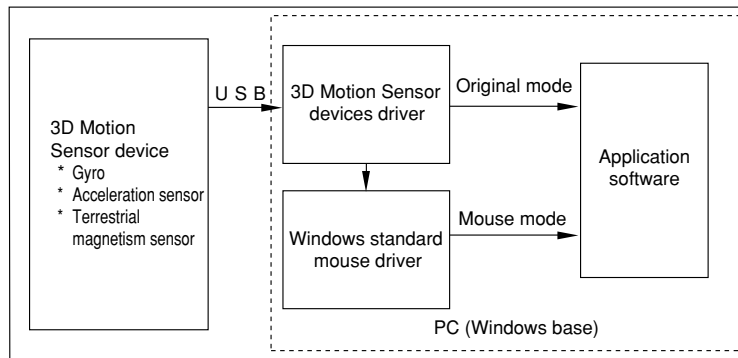
Specifications

Items		Specifications
Output Form		Z-Y-X Euler's angle
Dynamic Range	α (Yaw angle, Z-axis)	$\pm 180\text{deg}$
	β (Pitch angle, Y-axis)	$\pm 90\text{deg}$
	γ (Roll angle, X-axis)	$\pm 180\text{deg}$
Resolution	α (Yaw angle, Z-axis)	1deg
	β (Pitch angle, Y-axis)	1deg
	γ (Roll angle, X-axis)	1deg
Maximun Error	α (Yaw angle, Z-axis)	$\pm 10\text{deg}$
	β (Pitch angle, Y-axis)	$\pm 10\text{deg}$
	γ (Roll angle, X-axis)	$\pm 10\text{deg}$
Data Update Speed		125Hz
Interface	USB	Comforms with USB spec.1.1
Power Supply Voltage		DC5V (to be supplied via USB interface)
Current Consumption		100mA or less
External Dimensions	Width×Depth×Height	20×20×15mm (Typ) (Not including prominent portion and cable)
USB Cable Length		1.8m
Weight		6g (Typ)
Operating Temperature		0~40°C
Applicable Machine		IBM PC/AT 100% compatible machine with USB interface
Applicable OS		Microsoft Windows 98SE, Me, 2000, XP

*1: This is no gurantee of performance in all kind of models.

*2: Microsoft Windows 98SE, Windows Me, Windows 2000, Windows XP is a trademark of U.S. Microsoft Corporation registered in the U.S.A. and other countries.

Functional Block Diagram



Original mode : Performs posture angle calculation according to the data from the 3D Motion Sensor and transfers the result to the application software.

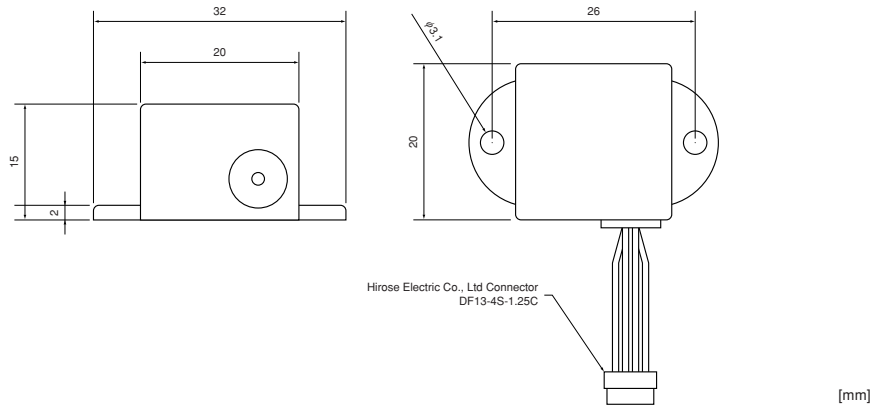
Mouse mode : Performs posture angle calculation according to the date from the 3D Motion Sensor, emulates the mouse operation based on the result, and transfers it to the application software.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact NEC TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

3D Motion Sensor Developer's Kit MDP-A3U9S-DK

■ Shapes and Dimensions



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact NEC TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEC TOKIN Corporation

Precautions



- The names of the products and the specifications in this catalog are subject to change without notice for the sake of improvement. The manufacturer also reserves the right to discontinue any of these products. At the time of delivery, please ask for specifications sheets to check the contents before use.
- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these components, be sure to check the specifications with the component in question mounted on the products.
- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products that deviates from the characteristics, specifications, or conditions for use described in this catalog.
- The products in this catalog are intended for use in ordinary electronic products. If any of these products are to be used in special applications requiring extremely high reliability, where product defects might pose a safety risk, please consult your NEC TOKIN sales representatives.
- Though the manufacturer has taken all possible precautions to ensure the quality and reliability of its products, improper use of products may result in bodily injury, fire, or similar accident. If you have any questions regarding the use of the products in question, please consult your NEC TOKIN sales representatives.
- Please be advised that the manufacturer accepts no responsibility for any infringement by users of the manufacturer's products on third party patents or industrial copyrights. The manufacturer is responsible only when such infractions are attributable to the structural design of the product and its manufacturing process.
- Export Control
 - For customers outside Japan
NEC TOKIN products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.
 - For customers in Japan
For products which are controlled items subject to the 'Foreign Exchange and Foreign Trade Law' of Japan, the export license specified by the law is required for export.
- This catalog is current as of March 2009.

For inquiry, Please call Sales Promotion Department (Japan)

Phone: 81-3-3515-9220 Fax: 81-3-3515-9221

©2009 NEC TOKIN Corporation

2nd Sales Unit Phone:81-3-3515-9220
NEC TOKIN Korea Co., Ltd. Phone:82-2-551-3651
NEC TOKIN America Inc. Phone:1-408-324-1790
Chicago Branch (Northeast Sales Office) Phone:1-847-981-5047
Austin Branch (Southeast Sales Office) Phone:1-512-219-4040
NEC TOKIN Hong Kong Ltd. Phone:852-2730-0028
NEC TOKIN Shanghai Co., Ltd. Phone:86-21-6228-0606
NEC TOKIN Shenzhen Co., Ltd. Phone:86-755-8246-5011

NEC TOKIN Singapore Pte.Ltd. Phone:65-6223-7076
Malaysia Branch Phone:60-3-6201-0702
NEC TOKIN Taiwan Co., Ltd. Phone:886-2-2521-3998
NEC TOKIN Europe GmbH Phone:49-2131-1866-0
Munich Office Phone:49-89-944-197-0
France Branch Phone:33-1-39-452011
Sweden Representative Office Phone:46-8-712-91-05

<http://www.nec-tokin.com>

0992PD3D15VOL03E March 00, 2009 H00P4
Printed in Japan



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact NEC TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.