

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)[Modules](#)[Data Structures](#)[Files](#)

Modules

Here is a list of all modules:

[[detail level](#) [1](#) [2](#) [3](#)]

▼ MIDDLEWARES

▼ MOTION_GR

[MOTION_GR_Exported_Types](#)

[MOTION_GR_Exported_Functions](#)

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by

[doxygen](#)

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
---------------------------	-------------------------	---------------------------------	-----------------------	--


Modules

MIDDLEWARES

Modules

MOTION_GR

Detailed Description

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by 
1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

Modules

MOTION_GR


MIDDLEWARES

Modules

MOTION_GR_Exported_Types

MOTION_GR_Exported_Functions

Detailed Description

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by 
1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

[Data Structures](#) | [Enumerations](#)

MOTION_GR_Exported_Types

[MIDDLEWARES](#) » [MOTION_GR](#)

Data Structures

```
struct MGR_input_t
```

Enumerations

```
enum MGR_output_t { MGR_NOGESTURE = 0x00, MGR_PICKUP  
= 0x01, MGR_GLANCE = 0x02, MGR_WAKEUP = 0x03 }
```

Detailed Description

Enumeration Type Documentation

enum MGR_output_t

Enumerator	
MGR_NOGESTURE	
MGR_PICKUP	
MGR_GLANCE	
MGR_WAKEUP	

Definition at line **71** of file **motion_gr.h**.

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
Data Structures	Data Structure Index	Data Fields		

[Data Fields](#)

MGR_input_t Struct Reference

[MIDDLEWARES](#) » [MOTION_GR](#) »
[MOTION_GR_Exported_Types](#)

```
#include <motion_gr.h>
```

Data Fields

float **AccX**

float **AccY**

float **AccZ**

Detailed Description

Definition at line **64** of file **motion_gr.h**.

Field Documentation

float AccX

Definition at line **66** of file [motion_gr.h](#).

float AccY

Definition at line **67** of file [motion_gr.h](#).

float AccZ

Definition at line **68** of file [motion_gr.h](#).

The documentation for this struct was generated from the following file:

- [algorithms/Middlewares/ST/STM32_MotionGR_Library/Inc/motion_](#)

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

[Functions](#)

MOTION_GR_Exported_Functions

[MIDDLEWARES](#) » [MOTION_GR](#)

Functions

void **MotionGR_Initialize** (void)
Initialize the MotionGR engine. [More...](#)

void **MotionGR_SetOrientation_Acc** (const char
*acc_orientation)
Set the MotionGR accelerometer data orientation. [More...](#)

void **MotionGR_Update** (**MGR_input_t** *data_in, **MGR_output_t**
*data_out)
Run gesture recognition algorithm. [More...](#)

uint8_t **MotionGR_GetLibVersion** (char *version)
Get the library version. [More...](#)

Detailed Description

Function Documentation

uint8_t MotionGR_GetLibVersion (char * **version)**

Get the library version.

Parameters

version pointer to an array of 35 char

Return values

Number of characters in the version string

void MotionGR_Initialize (void)

Initialize the MotionGR engine.

Parameters

none

Return values

none

**void
MotionGR_SetOrientation_Acc (const char * **acc_orientation**)**

Set the MotionGR accelerometer data orientation.

Parameters

***acc_orientation** reference system of the accelerometer raw data (for instance: south west up became "swu", north east up became "ned")

Return values

none

```
void MotionGR_Update ( MGR_input_t * data_in,  
                      MGR_output_t * data_out  
                      )
```

Run gesture recognition algorithm.

Parameters

data_in pointer to acceleration in [g]

data_out pointer to gesture index

Return values

none

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
Data Structures	Data Structure Index	Data Fields		

Data Structures

Here are the data structures with brief descriptions:

MGR_input_t	
-----------------------------	--

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by

doxygen

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
Data Structures	Data Structure Index	Data Fields		

Data Structure Index

M

M

MGR_input_t

M

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by [doxygen](#)

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
Data Structures	Data Structure Index	Data Fields		
All	Variables			

Here is a list of all struct and union fields with links to the structures/unions they belong to:

- AccX : [MGR_input_t](#)
- AccY : [MGR_input_t](#)
- AccZ : [MGR_input_t](#)

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
Data Structures	Data Structure Index	Data Fields		
All	Variables			

- AccX : [MGR_input_t](#)
- AccY : [MGR_input_t](#)
- AccZ : [MGR_input_t](#)

MotionGR Software Library







MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files
File List	Globals		

File List

Here is a list of all files with brief descriptions:

[detail level 1 2 3 4 5 6]

▼  algorithms	
▼  Middlewareas	
▼  ST	
▼  STM32_MotionGR_Library	
▼  Inc	
 motion_gr.h	Header for motion_gr module

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

[algorithms](#) >

algorithms Directory Reference

Directories

directory **Middleware**s

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by doxygen

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

[algorithms](#)

[Middlewares](#)

Middlewares Directory Reference

Directories

directory **ST**

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by doxygen

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

[Main Page](#)

[Modules](#)

[Data Structures](#)

[Files](#)

[algorithms](#)

[Middlewares](#)

[ST](#)

ST Directory Reference

Directories

directory **STM32_MotionGR_Library**

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by doxygen

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
algorithms	Middlewares	ST	STM32_MotionGR_Library	

STM32_MotionGR_Library Directory Reference

Directories

directory **Inc**

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by doxygen

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
algorithms	Middlewares	ST	STM32_MotionGR_Library	Inc

Inc Directory Reference

Files

file **motion_gr.h** [code]
Header for motion_gr module.

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
File List	Globals			
algorithms	Middlewares	ST	STM32_MotionGR_Library	Inc

[Data Structures](#) | [Enumerations](#) | [Functions](#)

motion_gr.h File Reference

Header for motion_gr module. [More...](#)

```
#include <stdint.h>
```

[Go to the source code of this file.](#)

Data Structures

```
struct MGR_input_t
```

Enumerations

```
enum MGR_output_t { MGR_NOGESTURE = 0x00, MGR_PICKUP  
= 0x01, MGR_GLANCE = 0x02, MGR_WAKEUP = 0x03 }
```

Functions

void **MotionGR_Initialize** (void)
Initialize the MotionGR engine. [More...](#)

void **MotionGR_SetOrientation_Acc** (const char
*acc_orientation)
Set the MotionGR accelerometer data orientation. [More...](#)

void **MotionGR_Update** (**MGR_input_t** *data_in, **MGR_output_t**
*data_out)
Run gesture recognition algorithm. [More...](#)

uint8_t **MotionGR_GetLibVersion** (char *version)
Get the library version. [More...](#)

Detailed Description

Header for motion_gr module.

Author

MEMS Application Team

Version

V2.0.0

Date

01-May-2017

Attention

© COPYRIGHT(c) 2017 STMicroelectronics

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of STMicroelectronics nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Definition in file [motion_gr.h](#).

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
File List	Globals			
All	Functions	Enumerations	Enumerator	

Here is a list of all functions, variables, defines, enums, and typedefs with links to the files they belong to:

- MGR_GLANCE : [motion_gr.h](#)
- MGR_NOGESTURE : [motion_gr.h](#)
- MGR_output_t : [motion_gr.h](#)
- MGR_PICKUP : [motion_gr.h](#)
- MGR_WAKEUP : [motion_gr.h](#)
- MotionGR_GetLibVersion() : [motion_gr.h](#)
- MotionGR_Initialize() : [motion_gr.h](#)
- MotionGR_SetOrientation_Acc() : [motion_gr.h](#)
- MotionGR_Update() : [motion_gr.h](#)

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
File List	Globals			
All	Functions	Enumerations	Enumerator	

- [MotionGR_GetLibVersion\(\)](#) : [motion_gr.h](#)
- [MotionGR_Initialize\(\)](#) : [motion_gr.h](#)
- [MotionGR_SetOrientation_Acc\(\)](#) : [motion_gr.h](#)
- [MotionGR_Update\(\)](#) : [motion_gr.h](#)

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by [doxygen](#)

1.8.9.1

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
File List	Globals			
All	Functions	Enumerations	Enumerator	

- `MGR_output_t` : [motion_gr.h](#)

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files	
File List	Globals			
All	Functions	Enumerations	Enumerator	

- MGR_GLANCE : [motion_gr.h](#)
- MGR_NOGESTURE : [motion_gr.h](#)
- MGR_PICKUP : [motion_gr.h](#)
- MGR_WAKEUP : [motion_gr.h](#)

MotionGR Software Library

MotionGR Software Library Documentation

Main Page	Modules	Data Structures	Files
File List	Globals		
algorithms	Middlewares	ST	STM32_MotionGR_Library
		Inc	

motion_gr.h

[Go to the documentation of this file.](#)

```
1
38 /* Define to prevent recursive inclusion ---
   ----- */
39 #ifndef _MOTION_GR_H_
40 #define _MOTION_GR_H_
41
42 #ifdef __cplusplus
43 extern "C" {
44 #endif
45
46 /* Includes -----
   ----- */
47 #include <stdint.h>
48
61 /* Exported constants -----
   ----- */
62
63 /* Exported types -----
   ----- */
64 typedef struct
65 {
66     float AccX;          /* Acceleration in X
   axis in [g] */
67     float AccY;          /* Acceleration in Y
   axis in [g] */
```

```

68     float AccZ;                /* Acceleration in Z
    axis in [g] */
69 } MGR_input_t;
70
71 typedef enum
72 {
73     MGR_NOGESTURE             = 0x00,
74     MGR_PICKUP                = 0x01,
75     MGR_GLANCE               = 0x02,
76     MGR_WAKEUP               = 0x03
77 } MGR_output_t;
78
83 /* Exported variables -----
    ----- */
84 /* Exported macro -----
    ----- */
85
90 /* Exported functions -----
    ----- */
91
97 void MotionGR_Initialize(void);
98
104 void MotionGR_SetOrientation_Acc(const char
    *acc_orientation);
105
112 void MotionGR_Update(MGR_input_t *data_in,
    MGR_output_t *data_out);
113
119 uint8_t MotionGR_GetLibVersion(char
    *version);
120
121
134 #ifdef __cplusplus
135 }
136 #endif
137
138 #endif /* _MOTION_GR_H_ */

```

139

140 /***** (C) COPYRIGHT
STMicroelectronics *****/

Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by doxygen

1.8.9.1