



MotionAT Software Library

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Modules

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▼ MOTION_AT	
MOTION_AT_Exported_Types	
MOTION_AT_Exported_Functions	



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MIDDLEWARES

Modules

MOTION_AT

Detailed Description

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MOTION_AT


MIDDLEWARES

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MOTION_AT_Exported_Types

MOTION_AT_Exported_Functions

Detailed Description

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MOTION_AT_Exported_Types


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Data Structures

```
struct MAT_input_t
```

```
struct MAT_output_t
```

Detailed Description

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MAT_input_t Struct Reference

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```
#include <motion_at.h>
```

Data Fields

float **acc_x**
Acceleration in X axis in [g]. [More...](#)

float **acc_y**
Acceleration in Y axis in [g]. [More...](#)

float **acc_z**
Acceleration in Z axis in [g]. [More...](#)

Detailed Description

Definition at line **62** of file **motion_at.h**.

Field Documentation

float acc_x

Acceleration in X axis in [g].

Definition at line **64** of file [motion_at.h](#).

float acc_y

Acceleration in Y axis in [g].

Definition at line **65** of file [motion_at.h](#).

float acc_z

Acceleration in Z axis in [g].

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

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

- Middlewares/ST/STM32_MotionAT_Library/Inc/[motion_at.h](#)



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MAT_output_t Struct Reference

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```
#include <motion_at.h>
```

Data Fields

uint8_t **active**
1 if currently active, 0 otherwise [More...](#)

Detailed Description

Definition at line **69** of file **motion_at.h**.

Field Documentation

uint8_t active

1 if currently active, 0 otherwise

Definition at line **71** of file **[motion_at.h](#)**.

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

- Middlewares/ST/STM32_MotionAT_Library/Inc/**[motion_at.h](#)**

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MOTION_AT_Exported_Functions

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Functions

void **MotionAT_Initialize** (void)
Initialize MotionAT engine (dynamically allocate memory)
[More...](#)

void **MotionAT_Deinitialize** (void)
Deinitialize MotionAT engine (free dynamically allocated memory) [More...](#)

void **MotionAT_Update** (**MAT_input_t** *data_in, **MAT_output_t** *data_out)
Run Active Time algorithm. [More...](#)

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

Detailed Description

Function Documentation

void MotionAT_Deinitialize (void)

Deinitialize MotionAT engine (free dynamically allocated memory)

Parameters

None

Return values

None

uint8_t MotionAT_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 MotionAT_Initialize (void)

Initialize MotionAT engine (dynamically allocate memory)

Parameters

None

Return values

None

```
void MotionAT_Update ( MAT_input_t* data_in,  
                      MAT_output_t* data_out  
                      )
```

Run Active Time algorithm.

Parameters

data_in pointer to **MAT_input_t** structure

data_out pointer to **MAT_output_t** structure

Return values

None



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Data Structures

Here are the data structures with brief descriptions:

MAT_input_t	
MAT_output_t	

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Data Structure Index

M	
M	MAT_output_t
	MAT_input_t
M	



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All	Variables			

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

- `acc_x` : [MAT_input_t](#)
- `acc_y` : [MAT_input_t](#)
- `acc_z` : [MAT_input_t](#)
- `active` : [MAT_output_t](#)



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All	Variables			

- `acc_x` : [MAT_input_t](#)
- `acc_y` : [MAT_input_t](#)
- `acc_z` : [MAT_input_t](#)
- `active` : [MAT_output_t](#)



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File List

Here is a list of all files with brief descriptions:

[detail level 1 2 3 4 5]

▼ Middlewares	
▼ ST	
▼ STM32_MotionAT_Library	
▼ Inc	
motion_at.h	Header for motion_at module



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Middlewares Directory Reference

Directories

directory **ST**

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ST Directory Reference

Directories

directory **STM32_MotionAT_Library**

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[STM32_MotionAT_Library](#)

STM32_MotionAT_Library Directory Reference

Directories

directory **Inc**

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Inc Directory Reference

Files

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



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motion_at.h File Reference

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

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

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

Data Structures

```
struct MAT_input_t
```

```
struct MAT_output_t
```

Functions

void **MotionAT_Initialize** (void)
Initialize MotionAT engine (dynamically allocate memory)
[More...](#)

void **MotionAT_Deinitialize** (void)
Deinitialize MotionAT engine (free dynamically allocated memory) [More...](#)

void **MotionAT_Update** (**MAT_input_t** *data_in, **MAT_output_t** *data_out)
Run Active Time algorithm. [More...](#)

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

Detailed Description

Header for motion_at module.

Author

MEMS Application Team

Version

V1.0.0

Date

01-September-2017

Attention

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



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

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- [MotionAT_GetLibVersion\(\)](#) : [motion_at.h](#)
- [MotionAT_Initialize\(\)](#) : [motion_at.h](#)
- [MotionAT_Update\(\)](#) : [motion_at.h](#)



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- [MotionAT_Initialize\(\)](#) : [motion_at.h](#)
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motion_at.h

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

```
1
38 /* Define to prevent recursive inclusion ---
----- */
39 #ifndef _MOTION_AT_H_
40 #define _MOTION_AT_H_
41
42 #ifdef __cplusplus
43 extern "C" {
44 #endif
45
46 /* Includes -----
----- */
47 #include <stdint.h>
48
61 /* Exported types -----
----- */
62 typedef struct
63 {
64     float acc_x;
65     float acc_y;
66     float acc_z;
67 } MAT_input_t;
68
```

```

69 typedef struct
70 {
71     uint8_t active;
72 } MAT_output_t;
73
78 /* Exported constants -----
----- */
79 /* Exported variables -----
----- */
80 /* Exported macro -----
----- */
81
86 /* Exported functions -----
----- */
87
93 void MotionAT_Initialize(void);
94
100 void MotionAT_Deinitialize(void);
101
108 void MotionAT_Update(MAT_input_t *data_in,
MAT_output_t *data_out);
109
115 uint8_t MotionAT_GetLibVersion(char
*version);
116
129 #ifdef __cplusplus
130 }
131 #endif
132
133 #endif /* _MOTION_AT_H_ */
134
135 /***** (C) COPYRIGHT
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```