



# MotionPW Software Library

MotionPW Software Library Documentation

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## Modules

Here is a list of all modules:

[detail level 1 2 3]

▼ MIDDLEWARES

  ▼ MOTION\_PW

    MOTION\_PW\_Exported\_Types

    MOTION\_PW\_Exported\_Functions

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## MIDDLEWARES

# Modules

---

**MOTION\_PW**

---

## Detailed Description

---

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**MOTION\_PW**

MIDDLEWARES

## Modules

---

**MOTION\_PW\_Exported\_Types**

---

**MOTION\_PW\_Exported\_Functions**

---

## Detailed Description

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

## **MOTION\_PW\_Exported\_Types**

[MIDDLEWARES](#) » [MOTION\\_PW](#)

## Data Structures

---

```
struct MPW_input_t
```

```
struct MPW_output_t
```

---

## Enumerations

---

```
enum MPW_activity_t { MPW_UNKNOWN_ACTIVITY = 0x00,  
                      MPW_WALKING = 0x01, MPW_FASTWALKING = 0x02,  
                      MPW_JOGGING = 0x03 }
```

---

## Detailed Description

---

### Enumeration Type Documentation

---

#### **enum MPW\_activity\_t**

Enumerator
MPW_UNKNOWN_ACTIVITY
MPW_WALKING
MPW_FASTWALKING
MPW_JOGGING

Definition at line **62** of file **motion\_pw.h**.

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Data Fields

## MPW\_input\_t Struct Reference

[MIDDLEWARES](#) » [MOTION\\_PW](#) »

[MOTION\\_PW\\_Exported\\_Types](#)

```
#include <motion\_pw.h>
```

## Data Fields

---

float **AccX**

float **AccY**

float **AccZ**

**MPW\_activity\_t CurrentActivity**

---

## Detailed Description

---

Definition at line **70** of file [motion\\_pw.h](#).

# Field Documentation

---

## **float AccX**

---

Definition at line [72](#) of file [motion\\_pw.h](#).

## **float AccY**

---

Definition at line [73](#) of file [motion\\_pw.h](#).

## **float AccZ**

---

Definition at line [74](#) of file [motion\\_pw.h](#).

## **MPW\_activity\_t CurrentActivity**

---

Definition at line [75](#) of file [motion\\_pw.h](#).

---

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

- Middlewares/ST/STM32\_MotionPW\_Library/Inc/[motion\\_pw.h](#)
- 

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## MPW\_output\_t Struct Reference

[MIDDLEWARES](#) » [MOTION\\_PW](#) »

[MOTION\\_PW\\_Exported\\_Types](#)

```
#include <motion\_pw.h>
```

## Data Fields

---

`uint8_t Cadence`

`uint32_t Nsteps`

`uint8_t Confidence`

---

## Detailed Description

---

Definition at line **78** of file [motion\\_pw.h](#).

# Field Documentation

---

## **uint8\_t Cadence**

---

Definition at line **80** of file **motion\_pw.h**.

## **uint8\_t Confidence**

---

Definition at line **82** of file **motion\_pw.h**.

## **uint32\_t Nsteps**

---

Definition at line **81** of file **motion\_pw.h**.

---

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

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- 

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## **MOTION\_PW\_Exported\_Functions**

[MIDDLEWARES](#) » [MOTION\\_PW](#)

## Functions

---

void **MotionPW\_Initialize** (void)

Initialize the MotionPW engine. [More...](#)

void **MotionPW\_Update** (**MPW\_input\_t** \*data\_in, **MPW\_output\_t**

\*data\_out)

Run pedometer algorithm. [More...](#)

uint8\_t **MotionPW\_GetLibVersion** (char \*version)

Get the library version. [More...](#)

void **MotionPW\_ResetPedometerLibrary** (void)

Reset library. [More...](#)

void **MotionPW\_ResetStepCount** (void)

Reset step count. [More...](#)

---

## Detailed Description

---

### Function Documentation

---

#### **uint8\_t MotionPW\_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 MotionPW\_Initialize ( void )**

---

Initialize the MotionPW engine.

##### **Parameters**

**None**

##### **Return values**

**None**

#### **void MotionPW\_ResetPedometerLibrary ( void )**

---

Reset library.

##### **Parameters**

**None**

## Return values

**None**

---

**void MotionPW\_ResetStepCount ( void )**

Reset step count.

## Parameters

**None**

## Return values

**None**

---

**void MotionPW\_Update ( MPW\_input\_t \* data\_in,  
MPW\_output\_t \* data\_out  
)**

Run pedometer algorithm.

## Parameters

**data\_in** pointer to acceleration in [g]

**data\_out** pointer to **MPW\_output\_t** structure

## Return values

**None**



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## Data Structures

Here are the data structures with brief descriptions:

- [MPW\\_input\\_t](#)
- [MPW\\_output\\_t](#)

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## Data Structure Index

M

M

[MPW\\_output\\_t](#)

[MPW\\_input\\_t](#)

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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 : [MPW\\_input\\_t](#)
- AccY : [MPW\\_input\\_t](#)
- AccZ : [MPW\\_input\\_t](#)
- Cadence : [MPW\\_output\\_t](#)
- Confidence : [MPW\\_output\\_t](#)
- CurrentActivity : [MPW\\_input\\_t](#)
- Nsteps : [MPW\\_output\\_t](#)

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# MotionPW Software Library

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- AccX : [MPW\\_input\\_t](#)
- AccY : [MPW\\_input\\_t](#)
- AccZ : [MPW\\_input\\_t](#)
- Cadence : [MPW\\_output\\_t](#)
- Confidence : [MPW\\_output\\_t](#)
- CurrentActivity : [MPW\\_input\\_t](#)
- Nsteps : [MPW\\_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_MotionPW_Library	
Inc	
motion_pw.h	Header for motion_pw module

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Middlewares

## Middlewares Directory Reference

## Directories

---

directory **ST**

---

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# MotionPW Software Library

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Middlewares

ST

## ST Directory Reference

# Directories

---

directory **STM32\_MotionPW\_Library**

---

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# MotionPW Software Library

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Middlewares > ST > STM32\_MotionPW\_Library >

## STM32\_MotionPW\_Library Directory Reference

# Directories

---

directory **Inc**

---

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# MotionPW Software Library

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Middlewares

ST

STM32\_MotionPW\_Library

Inc

## Inc Directory Reference

## Files

---

file [\*\*motion\\_pw.h\*\*](#) [code]

Header for motion\_pw module.

---

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ST

STM32\_MotionPW\_Library

Inc

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

## **motion\_pw.h File Reference**

Header for motion\_pw module. [More...](#)

#include <stdint.h>

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

## Data Structures

---

```
struct MPW_input_t
```

```
struct MPW_output_t
```

---

## Enumerations

---

```
enum MPW_activity_t { MPW_UNKNOWN_ACTIVITY = 0x00,  
                      MPW_WALKING = 0x01, MPW_FASTWALKING = 0x02,  
                      MPW_JOGGING = 0x03 }
```

---

## Functions

---

void **MotionPW\_Initialize** (void)

Initialize the MotionPW engine. [More...](#)

void **MotionPW\_Update** (**MPW\_input\_t** \*data\_in, **MPW\_output\_t**

\*data\_out)

Run pedometer algorithm. [More...](#)

uint8\_t **MotionPW\_GetLibVersion** (char \*version)

Get the library version. [More...](#)

void **MotionPW\_ResetPedometerLibrary** (void)

Reset library. [More...](#)

void **MotionPW\_ResetStepCount** (void)

Reset step count. [More...](#)

---

## Detailed Description

---

Header for motion\_pw module.

**Author**

MEMS Application Team

**Version**

V1.0.0

**Date**

01-September-2017

**Attention**

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Definition in file [motion\\_pw.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:

- MotionPW\_GetLibVersion() : [motion\\_pw.h](#)
- MotionPW\_Initialize() : [motion\\_pw.h](#)
- MotionPW\_ResetPedometerLibrary() : [motion\\_pw.h](#)
- MotionPW\_ResetStepCount() : [motion\\_pw.h](#)
- MotionPW\_Update() : [motion\\_pw.h](#)
- MPW\_activity\_t : [motion\\_pw.h](#)
- MPW\_FASTWALKING : [motion\\_pw.h](#)
- MPW\_JOGGING : [motion\\_pw.h](#)
- MPW\_UNKNOWN\_ACTIVITY : [motion\\_pw.h](#)
- MPW\_WALKING : [motion\\_pw.h](#)

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- MotionPW\_GetLibVersion() : [motion\\_pw.h](#)
- MotionPW\_Initialize() : [motion\\_pw.h](#)
- MotionPW\_ResetPedometerLibrary() : [motion\\_pw.h](#)
- MotionPW\_ResetStepCount() : [motion\\_pw.h](#)
- MotionPW\_Update() : [motion\\_pw.h](#)

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- MPW\_activity\_t : [motion\\_pw.h](#)

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- MPW\_FASTWALKING : [motion\\_pw.h](#)
- MPW\_JOGGING : [motion\\_pw.h](#)
- MPW\_UNKNOWN\_ACTIVITY : [motion\\_pw.h](#)
- MPW\_WALKING : [motion\\_pw.h](#)

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Middlewares > ST > STM32\_MotionPW\_Library > Inc >

## motion\_pw.h

Go to the documentation of this file.

```
1
38 /* Define to prevent recursive inclusion -----
   *-----*/
39 #ifndef _MOTION_PW_H_
40 #define _MOTION_PW_H_
41
42 #ifdef __cplusplus
43 extern "C" {
44 #endif
45
46 /* Includes -----
   *-----*/
47 #include <stdint.h>
48
61 /* Exported types -----
   *-----*/
62 typedef enum
63 {
64     MPW_UNKNOWN_ACTIVITY = 0x00,
65     MPW_WALKING          = 0x01,
66     MPW_FASTWALKING       = 0x02,
67     MPW_JOGGING           = 0x03
68 } MPW_activity_t;
```

```
69
70 typedef struct
71 {
72     float AccX;                      /* Acceleration in X axis in [g] */
73     float AccY;                      /* Acceleration in Y axis in [g] */
74     float AccZ;                      /* Acceleration in Z axis in [g] */
75     MPW_activity_t CurrentActivity; /* Current user activity */
76 } MPW_input_t;
77
78 typedef struct
79 {
80     uint8_t Cadence;                /* [steps/min] */
81     uint32_t Nsteps;
82     uint8_t Confidence;
83 } MPW_output_t;
84
89 /* Exported constants -----
----- */
90 /* Exported variables -----
----- */
91 /* Exported macro -----
----- */
92
97 /* Exported functions -----
----- */
98
104 void MotionPW_Initialize(void);
105
112 void MotionPW_Update(MPW_input_t *data_in,
113                           MPW_output_t *data_out);
119 uint8_t MotionPW_GetLibVersion(char
120                                 *version);
```

```
120
126 void MotionPW_ResetPedometerLibrary(void);
127
133 void MotionPW_ResetStepCount(void);
134
147 #ifdef __cplusplus
148 }
149#endif
150
151#endif /* _MOTION_PW_H_ */
152
153 /***** (C) COPYRIGHT
STMicroelectronics *****END OF FILE****/
```