

# MotionCP Software Library

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## Modules

Here is a list of all modules:

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#### ▼ MOTION\_CP

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

[MOTION\\_CP\\_Exported\\_Functions](#)

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## MIDDLEWARES

---

## Modules

---

**MOTION\_CP**

---

# Detailed Description

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Modules

## **MOTION\_CP**

**MIDDLEWARES**

## Modules

---


**MOTION\_CP\_Exported\_Types**

**MOTION\_CP\_Exported\_Functions**

---

# Detailed Description

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## MOTION\_CP\_Exported\_Types

[MIDDLEWARES](#) » [MOTION\\_CP](#)



# Data Structures

---

```
struct MCP_input_t
```

---

## Enumerations

---

```
enum MCP_output_t {  
    MCP_UNKNOWN = 0x00, MCP_ONDESK = 0x01,  
    MCP_INHAND = 0x02, MCP_NEARHEAD = 0x03,  
    MCP_SHIRTPOCKET = 0x04, MCP_TROUSERPOCKET =  
    0x05, MCP_ARMSSWING = 0x06, MCP_JACKETPOCKET =  
    0x07  
}
```

---

## Detailed Description

---

## Enumeration Type Documentation

---

### enum MCP\_output\_t

---

Enumerator	
MCP_UNKNOWN	
MCP_ONDESK	
MCP_INHAND	
MCP_NEARHEAD	
MCP_SHIRTPOCKET	
MCP_TROUSERPOCKET	
MCP_ARMSWING	
MCP_JACKETPOCKET	

Definition at line **71** of file **motion\_cp.h**.

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[Data Fields](#)

## MCP\_input\_t Struct Reference

[MIDDLEWARES](#) » [MOTION\\_CP](#) »  
[MOTION\\_CP\\_Exported\\_Types](#)

---

```
#include <motion_cp.h>
```

## Data Fields

---

float **AccX**

float **AccY**

float **AccZ**

---

## Detailed Description

---

Definition at line **64** of file **motion\_cp.h**.

## Field Documentation

---

### **float AccX**

---

Definition at line **66** of file [motion\\_cp.h](#).

### **float AccY**

---

Definition at line **67** of file [motion\\_cp.h](#).

### **float AccZ**

---

Definition at line **68** of file [motion\\_cp.h](#).

---

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

- [algorithms/Middlewares/ST/STM32\\_MotionCP\\_Library/Inc/motion\\_](#)

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## **MOTION\_CP\_Exported\_Functions**

[MIDDLEWARES](#) » [MOTION\\_CP](#)

---



## Functions

---

void **MotionCP\_Initialize** (void)  
Initialize the MotionCP engine. [More...](#)

void **MotionCP\_SetOrientation\_Acc** (const char  
\*acc\_orientation)  
Set the MotionCP accelerometer data orientation. [More...](#)

void **MotionCP\_Update** (MCP\_input\_t \*data\_in, MCP\_output\_t  
\*data\_out)  
Run carry position recognition algorithm. [More...](#)

uint8\_t **MotionCP\_GetLibVersion** (char \*version)  
Get the library version. [More...](#)

---

## Detailed Description

---

## Function Documentation

---

**uint8\_t MotionCP\_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 MotionCP\_Initialize ( void )**

---

Initialize the MotionCP engine.

### Parameters

**none**

### Return values

**none**

**void  
MotionCP\_SetOrientation\_Acc ( const char \* **acc\_orientation** )**

---

Set the MotionCP 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 MotionCP_Update ( MCP_input_t * data_in,  
                      MCP_output_t * data_out  
                      )
```

---

Run carry position recognition algorithm.

### Parameters

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

**data\_out** pointer to carry position index

### Return values

**none**

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## Data Structures

Here are the data structures with brief descriptions:

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

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## Data Structure Index

M

**M**

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

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<a href="#">All</a>	<a href="#">Variables</a>			

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

- AccX : [MCP\\_input\\_t](#)
- AccY : [MCP\\_input\\_t](#)
- AccZ : [MCP\\_input\\_t](#)

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<a href="#">All</a>	<a href="#">Variables</a>			

- AccX : [MCP\\_input\\_t](#)
- AccY : [MCP\\_input\\_t](#)
- AccZ : [MCP\\_input\\_t](#)

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## File List

Here is a list of all files with brief descriptions:

[detail level 1 2 3 4 5 6]

▼  <b>algorithms</b>	
▼  <b>Middlewareas</b>	
▼  <b>ST</b>	
▼  <b>STM32_MotionCP_Library</b>	
▼  <b>Inc</b>	
 <b>motion_cp.h</b>	Header for motion_cp module



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## **algorithms Directory Reference**

# Directories

---

directory **Middleware**s

---

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## Middlewares Directory Reference

# Directories

---

directory **ST**

---

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[ST](#)

## ST Directory Reference

# Directories

---

directory **STM32\_MotionCP\_Library**

---

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# MotionCP Software Library

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## STM32\_MotionCP\_Library Directory Reference

---

# Directories

---

directory **Inc**

---

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## Inc Directory Reference

---

## Files

---

file **motion\_cp.h** [code]  
Header for motion\_cp module.

---

# MotionCP Software Library

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

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

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

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

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

# Data Structures

---

```
struct MCP_input_t
```

---

## Enumerations

---

```
enum MCP_output_t {  
    MCP_UNKNOWN = 0x00, MCP_ONDESK = 0x01,  
    MCP_INHAND = 0x02, MCP_NEARHEAD = 0x03,  
    MCP_SHIRTPOCKET = 0x04, MCP_TROUSERPOCKET =  
    0x05, MCP_ARMSSWING = 0x06, MCP_JACKETPOCKET =  
    0x07  
}
```

---

## Functions

---

void **MotionCP\_Initialize** (void)  
Initialize the MotionCP engine. [More...](#)

void **MotionCP\_SetOrientation\_Acc** (const char  
\*acc\_orientation)  
Set the MotionCP accelerometer data orientation. [More...](#)

void **MotionCP\_Update** (MCP\_input\_t \*data\_in, MCP\_output\_t  
\*data\_out)  
Run carry position recognition algorithm. [More...](#)

uint8\_t **MotionCP\_GetLibVersion** (char \*version)  
Get the library version. [More...](#)

---

## Detailed Description

---

Header for motion\_cp module.

**Author**

MEMS Application Team

**Version**

V2.0.0

**Date**

01-May-2017

**| Attention**

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Definition in file [motion\\_cp.h](#).



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<a href="#">All</a>	<a href="#">Functions</a>	<a href="#">Enumerations</a>	<a href="#">Enumerator</a>	

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

- MCP\_ARMSWING : [motion\\_cp.h](#)
- MCP\_INHAND : [motion\\_cp.h](#)
- MCP\_JACKETPOCKET : [motion\\_cp.h](#)
- MCP\_NEARHEAD : [motion\\_cp.h](#)
- MCP\_ONDESK : [motion\\_cp.h](#)
- MCP\_output\_t : [motion\\_cp.h](#)
- MCP\_SHIRTPOCKET : [motion\\_cp.h](#)
- MCP\_TROUSERPOCKET : [motion\\_cp.h](#)
- MCP\_UNKNOWN : [motion\\_cp.h](#)
- MotionCP\_GetLibVersion() : [motion\\_cp.h](#)
- MotionCP\_Initialize() : [motion\\_cp.h](#)
- MotionCP\_SetOrientation\_Acc() : [motion\\_cp.h](#)
- MotionCP\_Update() : [motion\\_cp.h](#)

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<a href="#">All</a>	<a href="#">Functions</a>	<a href="#">Enumerations</a>	<a href="#">Enumerator</a>	

- [MotionCP\\_GetLibVersion\(\)](#) : [motion\\_cp.h](#)
- [MotionCP\\_Initialize\(\)](#) : [motion\\_cp.h](#)
- [MotionCP\\_SetOrientation\\_Acc\(\)](#) : [motion\\_cp.h](#)
- [MotionCP\\_Update\(\)](#) : [motion\\_cp.h](#)

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- MCP\_output\_t : [motion\\_cp.h](#)

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- MCP\_ARMSWING : [motion\\_cp.h](#)
- MCP\_INHAND : [motion\\_cp.h](#)
- MCP\_JACKETPOCKET : [motion\\_cp.h](#)
- MCP\_NEARHEAD : [motion\\_cp.h](#)
- MCP\_ONDESK : [motion\\_cp.h](#)
- MCP\_SHIRTPOCKET : [motion\\_cp.h](#)
- MCP\_TROUSERPOCKET : [motion\\_cp.h](#)
- MCP\_UNKNOWN : [motion\\_cp.h](#)

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		<a href="#">Inc</a>	

## motion\_cp.h

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

```
1
38 /* Define to prevent recursive inclusion ---
   ----- */
39 #ifndef _MOTION_CP_H_
40 #define _MOTION_CP_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 | } MCP_input_t;
70 |
71 | typedef enum
72 | {
73 |     MCP_UNKNOWN            = 0x00,
74 |     MCP_ONDESK             = 0x01,
75 |     MCP_INHAND             = 0x02,
76 |     MCP_NEARHEAD           = 0x03,
77 |     MCP_SHIRTPOCKET        = 0x04,
78 |     MCP_TROUSERPOCKET      = 0x05,
79 |     MCP_ARMSSWING           = 0x06,
80 |     MCP_JACKETPOCKET       = 0x07
81 | } MCP_output_t;
82 |
87 | /* Exported variables -----
   | ----- */
88 | /* Exported macro -----
   | ----- */
89 |
94 | /* Exported functions -----
   | ----- */
95 |
101 | void MotionCP_Initialize(void);
102 |
108 | void MotionCP_SetOrientation_Acc(const char
   | *acc_orientation);
109 |
116 | void MotionCP_Update(MCP_input_t *data_in,
   | MCP_output_t *data_out);
117 |
123 | uint8_t MotionCP_GetLibVersion(char
   | *version);
124 |
125 |
138 | #ifdef __cplusplus

```

```
139 }
140 #endif
141
142 #endif /* _MOTION_CP_H_ */
143
144 /***** (C) COPYRIGHT
    STMicroelectronics *****/
```

---

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