

# CDP Battery Monitor

v1.0

Generated by Doxygen 1.8.17



<b>1 Hierarchical Index</b>	<b>1</b>
1.1 Class Hierarchy	1
<b>2 Class Index</b>	<b>3</b>
2.1 Class List	3
<b>3 File Index</b>	<b>5</b>
3.1 File List	5
<b>4 Class Documentation</b>	<b>7</b>
4.1 CDP_BatteryFactory Class Reference	7
4.1.1 Detailed Description	8
4.1.2 Member Function Documentation	8
4.1.2.1 getPacketObj()	8
4.2 CDP_BatteryLogger Class Reference	8
4.2.1 Detailed Description	9
4.2.2 Member Function Documentation	10
4.2.2.1 cdp_dbg()	10
4.2.2.2 cdp_info()	10
4.2.2.3 getLogLevel()	11
4.2.2.4 setLogLevel()	11
4.3 CDP_BatteryPackets Class Reference	11
4.3.1 Detailed Description	13
4.3.2 Member Enumeration Documentation	13
4.3.2.1 CDP_BatteryPacketsType	13
4.3.3 Member Function Documentation	13
4.3.3.1 default_PktHandler()	13
4.3.3.2 get_dataLen()	14
4.3.3.3 get_error()	14
4.3.3.4 get_name()	15
4.3.3.5 get_type()	15
4.3.3.6 step()	15
4.4 CDP_BatteryParser Class Reference	16
4.4.1 Detailed Description	17
4.4.2 Member Function Documentation	17
4.4.2.1 cdp_dbg()	17
4.4.2.2 run()	18
4.5 CDP_BatteryPower Class Reference	18
4.5.1 Detailed Description	19
4.5.2 Member Function Documentation	20
4.5.2.1 cdp_dbg()	20
4.5.2.2 cdp_info()	20
4.5.2.3 get_dataLen()	21

4.5.2.4	<a href="#">get_error()</a>	21
4.5.2.5	<a href="#">get_name()</a>	21
4.5.2.6	<a href="#">get_type()</a>	22
4.5.2.7	<a href="#">getObj()</a>	22
4.5.2.8	<a href="#">step()</a>	22
4.6	<a href="#">CDP_BatteryStatus Class Reference</a>	23
4.6.1	<a href="#">Detailed Description</a>	24
4.6.2	<a href="#">Member Function Documentation</a>	25
4.6.2.1	<a href="#">cdp_dbg()</a>	25
4.6.2.2	<a href="#">cdp_info()</a>	25
4.6.2.3	<a href="#">get_dataLen()</a>	26
4.6.2.4	<a href="#">get_error()</a>	26
4.6.2.5	<a href="#">get_name()</a>	26
4.6.2.6	<a href="#">get_type()</a>	27
4.6.2.7	<a href="#">getObj()</a>	27
4.6.2.8	<a href="#">step()</a>	27
<b>5</b>	<b>File Documentation</b>	<b>29</b>
5.1	<a href="#">CDP_BatteryFactory.cpp File Reference</a>	29
5.1.1	<a href="#">Detailed Description</a>	29
5.2	<a href="#">CDP_BatteryFactory.h File Reference</a>	30
5.2.1	<a href="#">Detailed Description</a>	30
5.3	<a href="#">CDP_BatteryLogger.cpp File Reference</a>	31
5.3.1	<a href="#">Detailed Description</a>	31
5.4	<a href="#">CDP_BatteryLogger.h File Reference</a>	31
5.4.1	<a href="#">Detailed Description</a>	32
5.5	<a href="#">CDP_BatteryMonitor.cpp File Reference</a>	32
5.5.1	<a href="#">Detailed Description</a>	33
5.5.2	<a href="#">Function Documentation</a>	33
5.5.2.1	<a href="#">main()</a>	33
5.6	<a href="#">CDP_BatteryPackets.cpp File Reference</a>	33
5.6.1	<a href="#">Detailed Description</a>	34
5.6.2	<a href="#">Variable Documentation</a>	34
5.6.2.1	<a href="#">getPacketObjMap</a>	34
5.7	<a href="#">CDP_BatteryPackets.h File Reference</a>	35
5.7.1	<a href="#">Detailed Description</a>	36
5.7.2	<a href="#">Variable Documentation</a>	36
5.7.2.1	<a href="#">getPacketObjMap</a>	36
5.8	<a href="#">CDP_BatteryParser.cpp File Reference</a>	36
5.8.1	<a href="#">Detailed Description</a>	37
5.9	<a href="#">CDP_BatteryParser.h File Reference</a>	37
5.9.1	<a href="#">Detailed Description</a>	38

---

5.10 CDP_BatteryPower.cpp File Reference . . . . .	39
5.10.1 Detailed Description . . . . .	39
5.11 CDP_BatteryPower.h File Reference . . . . .	39
5.11.1 Detailed Description . . . . .	40
5.12 CDP_BatteryStatus.cpp File Reference . . . . .	41
5.12.1 Detailed Description . . . . .	41
5.13 CDP_BatteryStatus.h File Reference . . . . .	41
5.13.1 Detailed Description . . . . .	42
5.14 CDP_Platform.h File Reference . . . . .	43
5.14.1 Detailed Description . . . . .	43
<b>Index</b>	<b>45</b>



# Chapter 1

## Hierarchical Index

### 1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

CDP_BatteryLogger . . . . .	8
CDP_BatteryFactory . . . . .	7
CDP_BatteryPackets . . . . .	11
CDP_BatteryPower . . . . .	18
CDP_BatteryStatus . . . . .	23
CDP_BatteryParser . . . . .	16





## Chapter 2

# Class Index

### 2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

<a href="#">CDP_BatteryFactory</a>	
The Battery Monitor Factory Class . . . . .	7
<a href="#">CDP_BatteryLogger</a>	
The Battery Monitor Logging Class . . . . .	8
<a href="#">CDP_BatteryPackets</a>	
The Battery Packets Processing Class . . . . .	11
<a href="#">CDP_BatteryParser</a>	
The Battery Packets Parsing Class . . . . .	16
<a href="#">CDP_BatteryPower</a>	
The Singleton Battery Power Class . . . . .	18
<a href="#">CDP_BatteryStatus</a>	
The Singleton Battery Status Class . . . . .	23



## Chapter 3

# File Index

### 3.1 File List

Here is a list of all documented files with brief descriptions:

<a href="#">CDP_BatteryFactory.cpp</a>	
Battery Factory Class . . . . .	29
<a href="#">CDP_BatteryFactory.h</a>	
Battery Factory Class . . . . .	30
<a href="#">CDP_BatteryLogger.cpp</a>	
Battery Logger Class . . . . .	31
<a href="#">CDP_BatteryLogger.h</a>	
Battery Logger Class . . . . .	31
<a href="#">CDP_BatteryMonitor.cpp</a>	
Battery Monitor Application . . . . .	32
<a href="#">CDP_BatteryPackets.cpp</a>	
Battery Packet Class . . . . .	33
<a href="#">CDP_BatteryPackets.h</a>	
Battery Packets Class . . . . .	35
<a href="#">CDP_BatteryParser.cpp</a>	
Battery Parser Class . . . . .	36
<a href="#">CDP_BatteryParser.h</a>	
Battery Parser Class . . . . .	37
<a href="#">CDP_BatteryPower.cpp</a>	
Battery Power Class . . . . .	39
<a href="#">CDP_BatteryPower.h</a>	
Battery Power Class . . . . .	39
<a href="#">CDP_BatteryStatus.cpp</a>	
Battery Status Class . . . . .	41
<a href="#">CDP_BatteryStatus.h</a>	
Battery Status Class . . . . .	41
<a href="#">CDP_Platform.h</a>	
Generic Header for Windows or Linux based compilation . . . . .	43



## Chapter 4

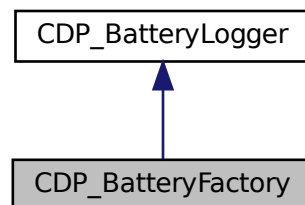
# Class Documentation

### 4.1 CDP\_BatteryFactory Class Reference

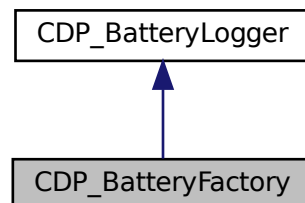
The Battery Monitor Factory Class.

```
#include <CDP_BatteryFactory.h>
```

Inheritance diagram for CDP\_BatteryFactory:



Collaboration diagram for CDP\_BatteryFactory:



## Static Public Member Functions

- static [CDP\\_BatteryPackets](#) \* [getPacketObj](#) (CDP\_BatteryPackets::CDP\_BatteryPacketsType\_t type)  
*Returns an object of the specialised packet type class.*

## Additional Inherited Members

### 4.1.1 Detailed Description

The Battery Monitor Factory Class.

### 4.1.2 Member Function Documentation

#### 4.1.2.1 [getPacketObj\(\)](#)

```
CDP_BatteryPackets * CDP_BatteryFactory::getPacketObj (
    CDP_BatteryPackets::CDP_BatteryPacketsType_t type ) [static]
```

Returns an object of the specialised packet type class.

#### Parameters

<i>type</i>	
-------------	--

#### Returns

[CDP\\_BatteryPackets](#) \*

The documentation for this class was generated from the following files:

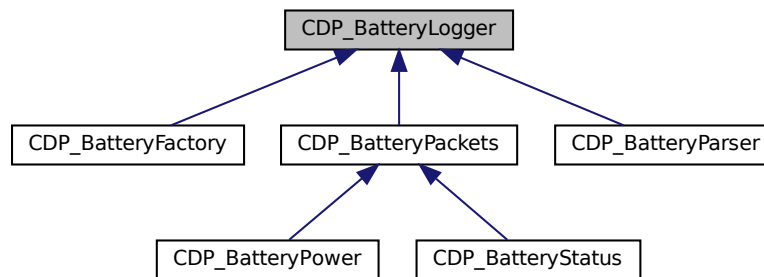
- [CDP\\_BatteryFactory.h](#)
- [CDP\\_BatteryFactory.cpp](#)

## 4.2 CDP\_BatteryLogger Class Reference

The Battery Monitor Logging Class.

```
#include <CDP_BatteryLogger.h>
```

Inheritance diagram for CDP\_BatteryLogger:



## Public Types

- enum [CDP\\_LoggerLevel](#) : uint8\_t { **CDP\_LOGGER\_LEVEL\_ERROR**, **CDP\_LOGGER\_LEVEL\_INFO**, **CDP\_LOGGER\_LEVEL\_DBG** }

*This defines the various logging levels available.*

## Public Member Functions

- template<typename... Args>  
void **cdp\_err** (Args &&... args)
- template<typename ... Args>  
void **cdp\_info** (Args &&... args)  
*This function is used for information level logging.*
- template<typename ... Args>  
void **cdp\_dbg** (Args &&... args)  
*This function is used for debug level logging.*

## Static Public Member Functions

- static void **setLogLevel** (int logLevel)  
*This function is used to set the log level dynamically.*
- static int **getLogLevel** ()  
*This function is used to get the log level dynamically.*

### 4.2.1 Detailed Description

The Battery Monitor Logging Class.

The class can be implemented to log into an xml file if required. Currently, it implements as stdout logging. The member functions can be overridden to class specific requirements. The logging can be compiled in debug mode (`_DEBUG`) to retrieve debug logging.

## 4.2.2 Member Function Documentation

### 4.2.2.1 cdp\_dbg()

```
template<typename ... Args>
CDP_BatteryLogger::cdp_dbg (
    Args &&... args ) [inline]
```

This function is used for debug level logging.

This function is used for error level logging.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

### 4.2.2.2 cdp\_info()

```
template<typename ... Args>
CDP_BatteryLogger::cdp_info (
    Args &&... args ) [inline]
```

This function is used for information level logging.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void



#### 4.2.2.3 getLogLevel()

```
int CDP_BatteryLogger::getLogLevel ( ) [static]
```

This function is used to get the log level dynamically.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

int

#### 4.2.2.4 setLogLevel()

```
void CDP_BatteryLogger::setLogLevel (
    int logLevel ) [static]
```

This function is used to set the log level dynamically.

##### Parameters

<i>logLevel</i>	
-----------------	--

##### Returns

void

The documentation for this class was generated from the following files:

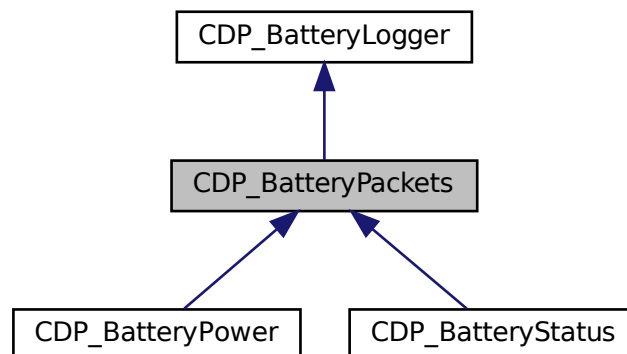
- [CDP\\_BatteryLogger.h](#)
- [CDP\\_BatteryLogger.cpp](#)

## 4.3 CDP\_BatteryPackets Class Reference

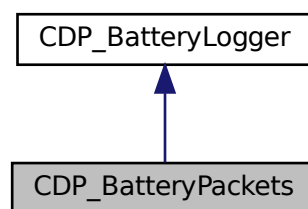
The Battery Packets Processing Class.

```
#include <CDP_BatteryPackets.h>
```

Inheritance diagram for CDP\_BatteryPackets:



Collaboration diagram for CDP\_BatteryPackets:



## Public Types

- enum `CDP_BatteryPacketsType` : `uint8_t` { `CDP_PACKETTYPE_MIN`, `CDP_PACKETSTYPE_BATTERYPOWER` = `CDP_PACKETTYPE_MIN`, `CDP_PACKETSTYPE_BATTERYSTATUS`, `CDP_PACKETTYPE_MAX` }

*Use this enum to add new packet processing class.*

- typedef enum `CDP_BatteryPackets::CDP_BatteryPacketsType` `CDP_BatteryPacketsType_t`
- typedef `CDP_BatteryPackets` `*(getPacketObjFuncPtr_t)` (`CDP_BatteryPacketsType_t` &)

*Function Pointer typedef to handle packet specific object allocation.*

## Public Member Functions

- virtual void `step` (`std::vector< uint8_t >` &)=0  
*This function is used to cycle the class state machine once.*
- virtual `CDP_BatteryPacketsType_t` `get_type` (void)=0

*This function is used to retrieve the packet type of the class.*

- virtual ssize\_t [get\\_dataLen](#) (void)=0

*This function is used to retrieve the data pkt len of the class.*

- virtual std::string [get\\_name](#) (void)=0

*This function is used to retrieve the data name of the class.*

- virtual bool [get\\_error](#) (void)=0

*This function is used to retrieve the error occurred in the class.*

## Static Public Member Functions

- static [CDP\\_BatteryPackets](#) \* [default\\_PktHandler](#) (CDP\_BatteryPacketsType\_t &)

*This is an default function for error handling.*

### 4.3.1 Detailed Description

The Battery Packets Processing Class.

This class is used to retrieve specialised packet processing object To add a new packet processing engine:

1. Define a new Packet Type in [CDP\\_BatteryPackets.h](#)
2. Define a Packet Processing Class (refer: [CDP\\_BatteryStatus.h/cpp](#) as an example)
3. Add the class entry in the array getPacketObjMap (found in [CDP\\_BatteryPackets.cpp](#))

### 4.3.2 Member Enumeration Documentation

#### 4.3.2.1 CDP\_BatteryPacketsType

```
enum CDP\_BatteryPackets::CDP\_BatteryPacketsType : uint8_t
```

Use this enum to add new packet processing class.

Ensure no duplicate packet types are present. Preserve the Min & Max enums i.e add new types between the Min and Max packet types.

### 4.3.3 Member Function Documentation

#### 4.3.3.1 default\_PktHandler()

```
CDP\_BatteryPackets * CDP\_BatteryPackets::default\_PktHandler (  
    CDP_BatteryPacketsType_t & t ) [static]
```

This is an default function for error handling.

**Parameters**

<i>type</i>	
-------------	--

**Returns**

CDP\_BatteryPackets\*

**4.3.3.2 get\_dataLen()**

```
ssize_t CDP_BatteryPackets::get_dataLen (
    void ) [pure virtual]
```

This function is used to retrieve the data pkt len of the class.

**Parameters**

<i>void</i>	
-------------	--

**Returns**

ssize\_t

Implemented in [CDP\\_BatteryPower](#), and [CDP\\_BatteryStatus](#).

**4.3.3.3 get\_error()**

```
bool CDP_BatteryPackets::get_error (
    void ) [pure virtual]
```

This function is used to retrieve the error occurred in the class.

**Parameters**

<i>void</i>	
-------------	--

**Returns**

bool

Implemented in [CDP\\_BatteryPower](#), and [CDP\\_BatteryStatus](#).

#### 4.3.3.4 get\_name()

```
std::string CDP_BatteryPackets::get_name (
    void ) [pure virtual]
```

This function is used to retrieve the data name of the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

std::string

Implemented in [CDP\\_BatteryPower](#), and [CDP\\_BatteryStatus](#).

#### 4.3.3.5 get\_type()

```
CDP_BatteryPacketsType_t CDP_BatteryPackets::get_type (
    void ) [pure virtual]
```

This function is used to retrieve the packet type of the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

CDP\_BatteryPacketsType\_t

Implemented in [CDP\\_BatteryPower](#), and [CDP\\_BatteryStatus](#).

#### 4.3.3.6 step()

```
CDP_BatteryPackets::step (
    std::vector< uint8_t > & ) [pure virtual]
```

This function is used to cycle the class state machine once.

##### Parameters

<i>data</i>	packet to be processed
-------------	------------------------

**Returns**

void

Implemented in [CDP\\_BatteryPower](#), and [CDP\\_BatteryStatus](#).

The documentation for this class was generated from the following files:

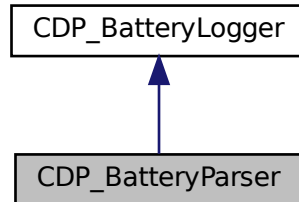
- [CDP\\_BatteryPackets.h](#)
- [CDP\\_BatteryPackets.cpp](#)

## 4.4 CDP\_BatteryParser Class Reference

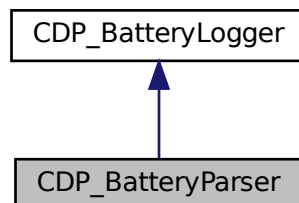
The Battery Packets Parsing Class.

```
#include <CDP_BatteryParser.h>
```

Inheritance diagram for CDP\_BatteryParser:



Collaboration diagram for CDP\_BatteryParser:



## Public Member Functions

- `template<typename ... Args>`  
`void cdp_dbg (Args &&... args)`  
*Class specific override for cdp\_dbg.*

## Static Public Member Functions

- `static void run (const std::string &fileName)`  
*This function is used to execute the packet processing engine until end-of-file or any processing errors.*

## Additional Inherited Members

### 4.4.1 Detailed Description

The Battery Packets Parsing Class.

This class is used to retrieve the data from a stream and check for packet type and errors. If no errors are found, it forwards the packet to the specialised packet processing class.

### 4.4.2 Member Function Documentation

#### 4.4.2.1 cdp\_dbg()

```
template<typename ... Args>
CDP_BatteryParser::cdp_dbg (
    Args &&... args ) [inline]
```

Class specific override for cdp\_dbg.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

#### 4.4.2.2 run()

```
void CDP_BatteryParser::run (
    const std::string & fileName ) [static]
```

This function is used to execute the packet processing engine until end-of-file or any processing errors.

##### Parameters

<i>fileName</i>	
-----------------	--

##### Returns

void

The documentation for this class was generated from the following files:

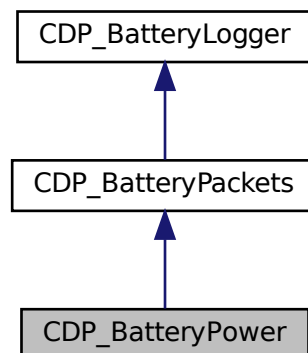
- [CDP\\_BatteryParser.h](#)
- [CDP\\_BatteryParser.cpp](#)

## 4.5 CDP\_BatteryPower Class Reference

The Singleton Battery Power Class.

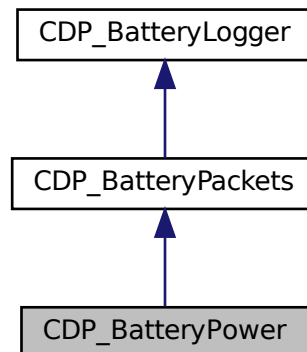
```
#include <CDP_BatteryPower.h>
```

Inheritance diagram for CDP\_BatteryPower:





Collaboration diagram for CDP\_BatteryPower:



## Public Member Functions

- `template<typename ... Args>`  
`void cdp_dbg (Args &&... args)`  
*Class specific override for cdp\_dbg.*
- `template<typename ... Args>`  
`void cdp_info (Args &&... args)`  
*Class specific override for cdp\_info.*
- `void step (std::vector< uint8_t > &)`  
*This function is used to cycle the class state machine once.*
- `CDP_BatteryPacketsType_t get_type (void)`  
*This function is used to retrieve the packet type of the class.*
- `ssize_t get_dataLen (void)`  
*This function is used to retrieve the data pkt len of the class.*
- `std::string get_name (void)`  
*This function is used to retrieve the data name of the class.*
- `bool get_error (void)`  
*This function is used to retrieve the error occurred in the class.*

## Static Public Member Functions

- `static CDP_BatteryPackets * getObj (CDP_BatteryPackets::CDP_BatteryPacketsType_t &type)`  
*This function is used to retrieve a Singleton object of the class.*

## Additional Inherited Members

### 4.5.1 Detailed Description

The Singleton Battery Power Class.

## 4.5.2 Member Function Documentation

### 4.5.2.1 cdp\_dbg()

```
template<typename ... Args>
CDP_BatteryPower::cdp_dbg (
    Args &&... args ) [inline]
```

Class specific override for cdp\_dbg.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

### 4.5.2.2 cdp\_info()

```
template<typename ... Args>
CDP_BatteryPower::cdp_info (
    Args &&... args ) [inline]
```

Class specific override for cdp\_info.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

#### 4.5.2.3 get\_dataLen()

```
ssize_t CDP_BatteryPower::get_dataLen (
    void ) [virtual]
```

This function is used to retrieve the data pkt len of the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

ssize\_t

Implements [CDP\\_BatteryPackets](#).

#### 4.5.2.4 get\_error()

```
bool CDP_BatteryPower::get_error (
    void ) [virtual]
```

This function is used to retrieve the error occurred in the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

bool

Implements [CDP\\_BatteryPackets](#).

#### 4.5.2.5 get\_name()

```
std::string CDP_BatteryPower::get_name (
    void ) [virtual]
```

This function is used to retrieve the data name of the class.

##### Parameters

<i>void</i>	
-------------	--

**Returns**

std::string

Implements [CDP\\_BatteryPackets](#).

**4.5.2.6 get\_type()**

```
CDP_BatteryPacketsType_t CDP_BatteryPower::get_type (
    void ) [virtual]
```

This function is used to retrieve the packet type of the class.

**Parameters**

<i>void</i>	
-------------	--

**Returns**

CDP\_BatteryPacketsType\_t

Implements [CDP\\_BatteryPackets](#).

**4.5.2.7 getObj()**

```
CDP_BatteryPackets * CDP_BatteryPower::getObj (
    CDP_BatteryPackets::CDP_BatteryPacketsType_t & type ) [static]
```

This function is used to retrieve a Singleton object of the class.

**Parameters**

<i>type</i>	is used to verify the correct packet type
-------------	---

**Returns**

[CDP\\_BatteryPackets](#) \*

**4.5.2.8 step()**

```
CDP_BatteryPower::step (
    std::vector< uint8_t > & data ) [virtual]
```

This function is used to cycle the class state machine once.

## Parameters

<i>data</i>	packet to be processed
-------------	------------------------

## Returns

void

Implements [CDP\\_BatteryPackets](#).

The documentation for this class was generated from the following files:

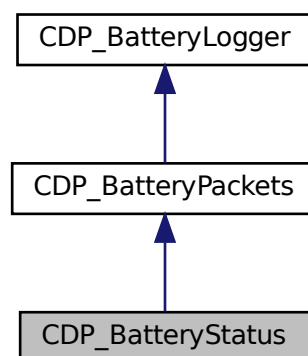
- [CDP\\_BatteryPower.h](#)
- [CDP\\_BatteryPower.cpp](#)

## 4.6 CDP\_BatteryStatus Class Reference

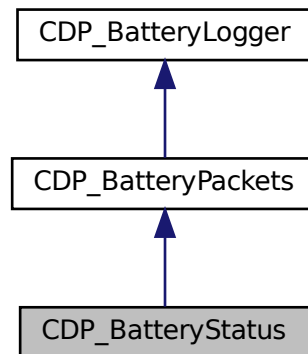
The Singleton Battery Status Class.

```
#include <CDP_BatteryStatus.h>
```

Inheritance diagram for CDP\_BatteryStatus:



Collaboration diagram for CDP\_BatteryStatus:



## Public Member Functions

- `template<typename ... Args>`  
`void cdp_dbg (Args &&... args)`  
*Class specific override for cdp\_dbg.*
- `template<typename ... Args>`  
`void cdp_info (Args &&... args)`  
*Class specific override for cdp\_info.*
- `void step (std::vector< uint8_t > &)`  
*This function is used to cycle the class state machine once.*
- `CDP_BatteryPacketsType_t get_type (void)`  
*This function is used to retrieve the packet type of the class.*
- `ssize_t get_dataLen (void)`  
*This function is used to retrieve the data pkt len of the class.*
- `std::string get_name (void)`  
*This function is used to retrieve the data name of the class.*
- `bool get_error (void)`  
*This function is used to retrieve the error occurred in the class.*

## Static Public Member Functions

- `static CDP_BatteryPackets * getObj (CDP_BatteryPackets::CDP_BatteryPacketsType_t &type)`  
*This function is used to retrieve a Singleton object of the class.*

## Additional Inherited Members

### 4.6.1 Detailed Description

The Singleton Battery Status Class.

## 4.6.2 Member Function Documentation

### 4.6.2.1 cdp\_dbg()

```
template<typename ... Args>
CDP_BatteryStatus::cdp_dbg (
    Args &&... args ) [inline]
```

Class specific override for cdp\_dbg.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

### 4.6.2.2 cdp\_info()

```
template<typename ... Args>
CDP_BatteryStatus::cdp_info (
    Args &&... args ) [inline]
```

Class specific override for cdp\_info.

#### Template Parameters

<i>Args</i>	
-------------	--

#### Parameters

<i>args</i>	
-------------	--

#### Returns

void

#### 4.6.2.3 get\_dataLen()

```
ssize_t CDP_BatteryStatus::get_dataLen (
    void ) [virtual]
```

This function is used to retrieve the data pkt len of the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

ssize\_t

Implements [CDP\\_BatteryPackets](#).

#### 4.6.2.4 get\_error()

```
bool CDP_BatteryStatus::get_error (
    void ) [virtual]
```

This function is used to retrieve the error occurred in the class.

##### Parameters

<i>void</i>	
-------------	--

##### Returns

bool

Implements [CDP\\_BatteryPackets](#).

#### 4.6.2.5 get\_name()

```
std::string CDP_BatteryStatus::get_name (
    void ) [virtual]
```

This function is used to retrieve the data name of the class.

##### Parameters

<i>void</i>	
-------------	--



**Returns**

std::string

Implements [CDP\\_BatteryPackets](#).**4.6.2.6 get\_type()**

```
CDP_BatteryPacketsType_t CDP_BatteryStatus::get_type (
    void ) [virtual]
```

This function is used to retrieve the packet type of the class.

**Parameters**

<i>void</i>	
-------------	--

**Returns**

CDP\_BatteryPacketsType\_t

Implements [CDP\\_BatteryPackets](#).**4.6.2.7 getObj()**

```
CDP_BatteryPackets * CDP_BatteryStatus::getObj (
    CDP_BatteryPackets::CDP_BatteryPacketsType_t & type ) [static]
```

This function is used to retrieve a Singleton object of the class.

**Parameters**

<i>type</i>	is used to verify the correct packet type
-------------	---

**Returns**[CDP\\_BatteryPackets](#) \***4.6.2.8 step()**

```
CDP_BatteryStatus::step (
    std::vector< uint8_t > & data ) [virtual]
```

This function is used to cycle the class state machine once.

**Parameters**

<i>data</i>	packet to be processed
-------------	------------------------

**Returns**

void

Implements [CDP\\_BatteryPackets](#).

The documentation for this class was generated from the following files:

- [CDP\\_BatteryStatus.h](#)
- [CDP\\_BatteryStatus.cpp](#)

## Chapter 5

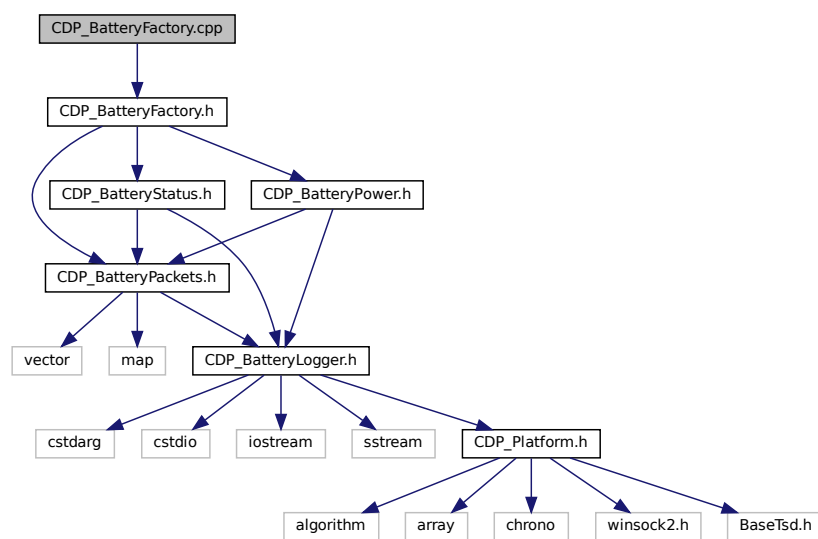
# File Documentation

### 5.1 CDP\_BatteryFactory.cpp File Reference

Battery Factory Class.

```
#include "CDP_BatteryFactory.h"
```

Include dependency graph for CDP\_BatteryFactory.cpp:



#### 5.1.1 Detailed Description

Battery Factory Class.

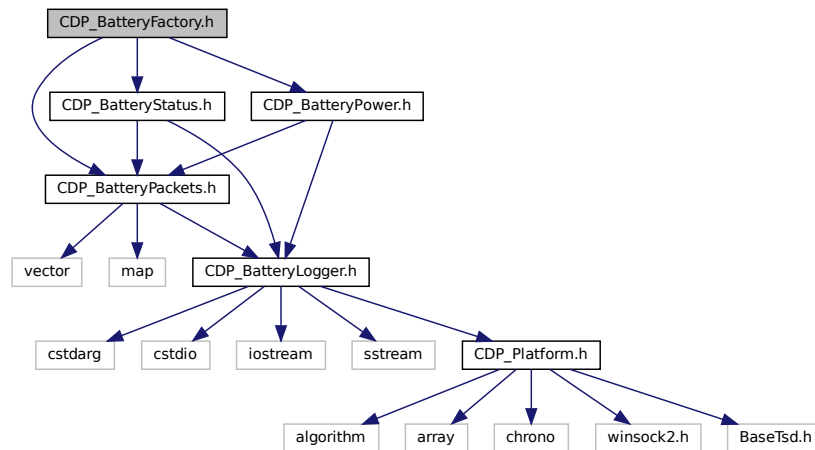
Author

Subhasish Ghosh

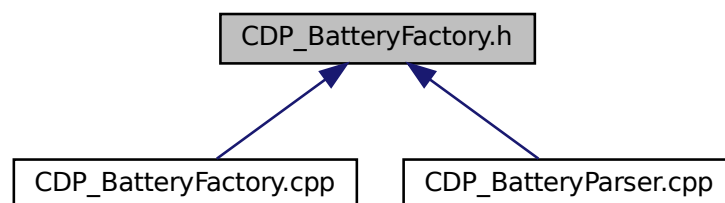
## 5.2 CDP\_BatteryFactory.h File Reference

Battery Factory Class.

```
#include "CDP_BatteryPackets.h"
#include "CDP_BatteryPower.h"
#include "CDP_BatteryStatus.h"
Include dependency graph for CDP_BatteryFactory.h:
```



This graph shows which files directly or indirectly include this file:



### Classes

- class [CDP\\_BatteryFactory](#)  
The Battery Monitor Factory Class.

### 5.2.1 Detailed Description

Battery Factory Class.

Author

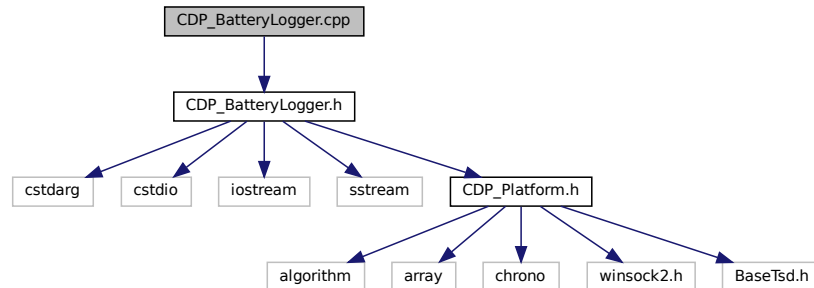
Subhasish Ghosh

## 5.3 CDP\_BatteryLogger.cpp File Reference

Battery Logger Class.

```
#include "CDP_BatteryLogger.h"
```

Include dependency graph for CDP\_BatteryLogger.cpp:



### 5.3.1 Detailed Description

Battery Logger Class.

Author

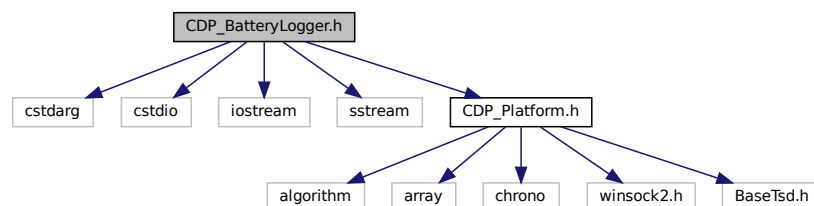
Subhasish Ghosh

## 5.4 CDP\_BatteryLogger.h File Reference

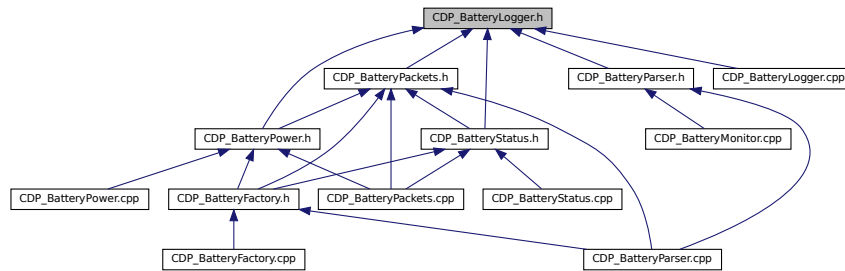
Battery Logger Class.

```
#include <cstdarg>
#include <cstdio>
#include <iostream>
#include <sstream>
#include "CDP_Platform.h"
```

Include dependency graph for CDP\_BatteryLogger.h:



This graph shows which files directly or indirectly include this file:



## Classes

- class [CDP\\_BatteryLogger](#)  
*The Battery Monitor Logging Class.*

### 5.4.1 Detailed Description

Battery Logger Class.

Author

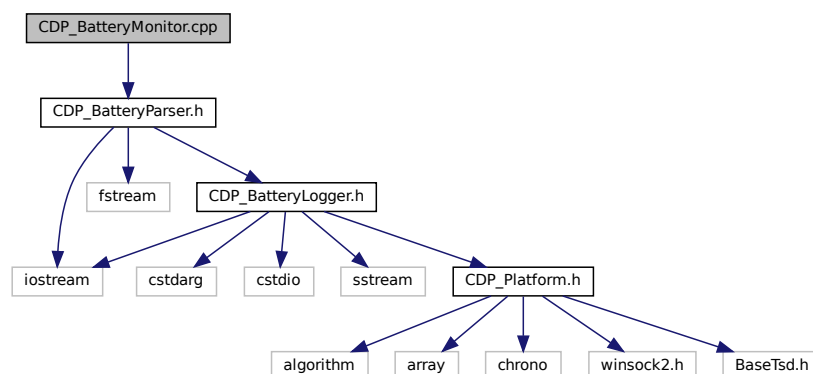
Subhasish Ghosh

## 5.5 CDP\_BatteryMonitor.cpp File Reference

Battery Monitor Application.

```
#include "CDP_BatteryParser.h"
```

Include dependency graph for CDP\_BatteryMonitor.cpp:



## Functions

- `int main (int argc, char **argv)`  
*The main entry point function.*

### 5.5.1 Detailed Description

Battery Monitor Application.

#### Note

Requires minimum c++17 to compile

#### Author

Subhasish Ghosh

### 5.5.2 Function Documentation

#### 5.5.2.1 main()

```
int main (  
    int argc,  
    char ** argv )
```

The main entry point function.

#### Parameters

<i>argc</i>	
<i>argv</i>	

#### Returns

int

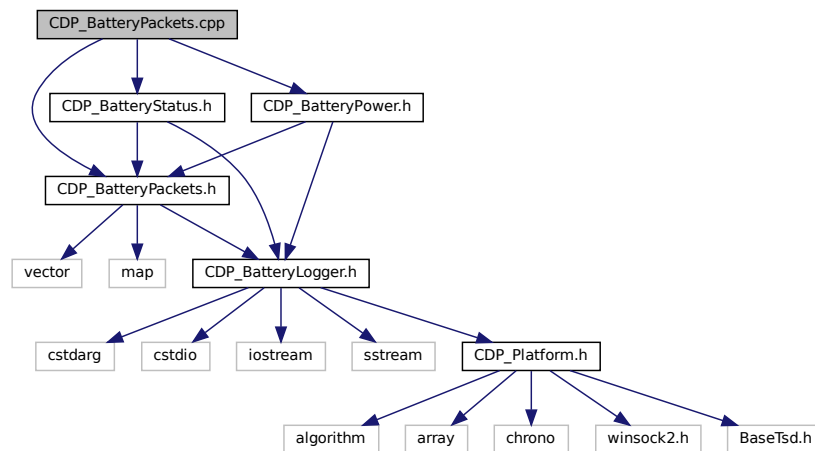
## 5.6 CDP\_BatteryPackets.cpp File Reference

Battery Packet Class.

```
#include "CDP_BatteryPackets.h"  
#include "CDP_BatteryPower.h"
```

```
#include "CDP_BatteryStatus.h"
```

Include dependency graph for CDP\_BatteryPackets.cpp:



## Variables

- `std::map< CDP_BatteryPackets::CDP_BatteryPacketsType_t, CDP_BatteryPackets::getPacketObjFuncPtr_t > getPacketObjMap`

*This map contains entries for specialised packet processing classes.*

## 5.6.1 Detailed Description

Battery Packet Class.

Author

Subhasish Ghosh

## 5.6.2 Variable Documentation

### 5.6.2.1 getPacketObjMap

getPacketObjMap

**Initial value:**

```

= {
    std::make_pair(CDP_BatteryPackets::CDP_BatteryPacketsType::CDP_PACKETSTYPE_BATTERYPOWER,
        CDP_BatteryPower::getObj),
    std::make_pair(CDP_BatteryPackets::CDP_BatteryPacketsType::CDP_PACKETSTYPE_BATTERYSTATUS,
        CDP_BatteryStatus::getObj),
    std::make_pair(CDP_BatteryPackets::CDP_BatteryPacketsType::CDP_PACKETTYPE_MAX,
        CDP_BatteryPackets::default_PktHandler)
}

```

This map contains entries for specialised packet processing classes.

The map is of the form `<CDP_BatteryPacketsType_t, getPacketObjFuncPtr_t>`. The function pointer is used to retrieve a specialised packet processing object. Add a new entry here for newly added packet types and implement the class `getObj`. To add a new packet processing engine:

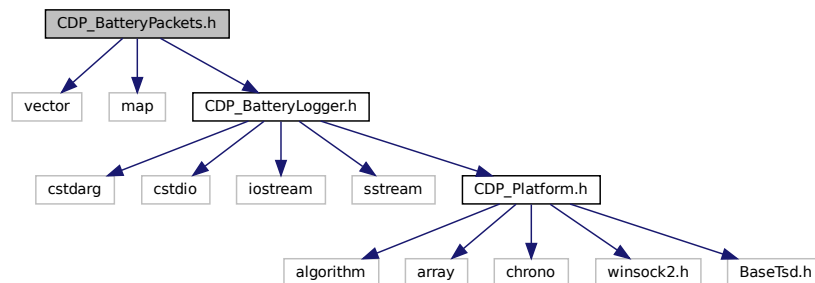


1. Define a new Packet Type in [CDP\\_BatteryPackets.h](#)
2. Define a Packet Processing Class (refer: [CDP\\_BatteryStatus.h/cpp](#) as an example)
3. Add the class entry in the array getPacketObjMap (found in [CDP\\_BatteryPackets.cpp](#))

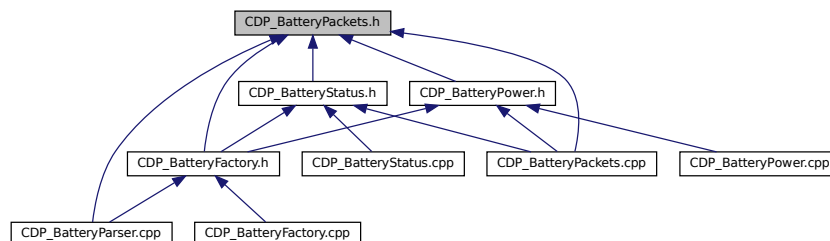
## 5.7 CDP\_BatteryPackets.h File Reference

Battery Packets Class.

```
#include <vector>
#include <map>
#include "CDP_BatteryLogger.h"
Include dependency graph for CDP_BatteryPackets.h:
```



This graph shows which files directly or indirectly include this file:



### Classes

- class [CDP\\_BatteryPackets](#)  
*The Battery Packets Processing Class.*

### Variables

- `std::map< CDP_BatteryPackets::CDP_BatteryPacketsType_t, CDP_BatteryPackets::getPacketObjFuncPtr_t > getPacketObjMap`  
*This map contains entries for specialised packet processing classes.*

### 5.7.1 Detailed Description

Battery Packets Class.

Author

Subhasish Ghosh

### 5.7.2 Variable Documentation

#### 5.7.2.1 getPacketObjMap

```
std::map<CDP_BatteryPackets::CDP_BatteryPacketsType_t, CDP_BatteryPackets::getPacketObjFuncPtr_t>  
getPacketObjMap
```

This map contains entries for specialised packet processing classes.

The map is of the form <CDP\_BatteryPacketsType\_t, getPacketObjFuncPtr\_t>. The function pointer is used to retrieve a specialised packet processing object. Add a new entry here for newly added packet types and implement the class getObj. To add a new packet processing engine:

1. Define a new Packet Type in [CDP\\_BatteryPackets.h](#)
2. Define a Packet Processing Class (refer: [CDP\\_BatteryStatus.h/cpp](#) as an example)
3. Add the class entry in the array getPacketObjMap (found in [CDP\\_BatteryPackets.cpp](#))

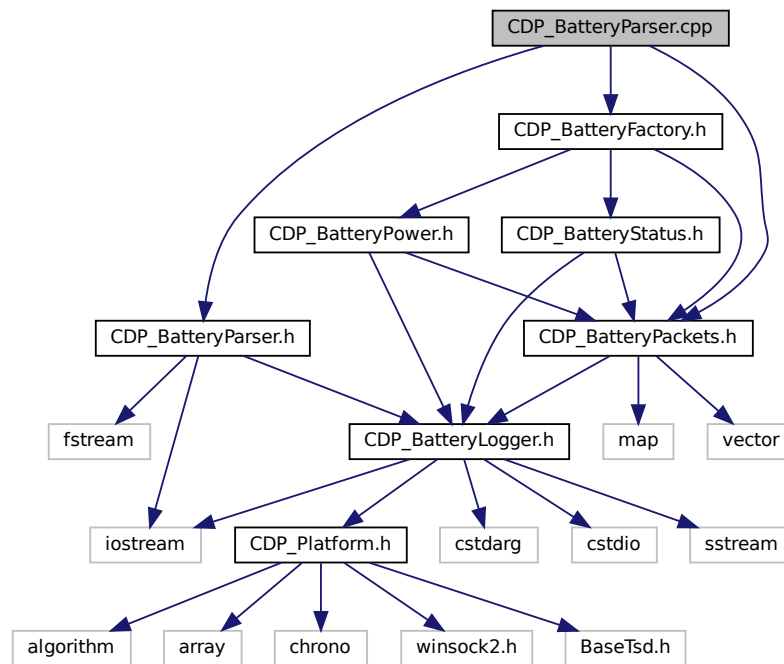
## 5.8 CDP\_BatteryParser.cpp File Reference

Battery Parser Class.

```
#include "CDP_BatteryParser.h"  
#include "CDP_BatteryPackets.h"
```

```
#include "CDP_BatteryFactory.h"
```

Include dependency graph for CDP\_BatteryParser.cpp:



### 5.8.1 Detailed Description

Battery Parser Class.

Author

Subhasish Ghosh

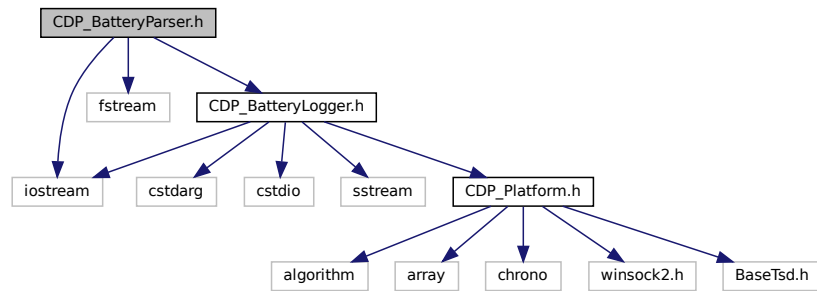
## 5.9 CDP\_BatteryParser.h File Reference

Battery Parser Class.

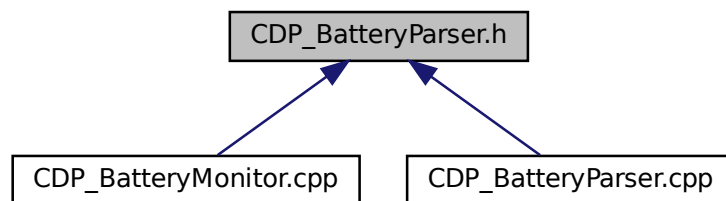
```
#include <iostream>
#include <fstream>
```

```
#include "CDP_BatteryLogger.h"
```

Include dependency graph for CDP\_BatteryParser.h:



This graph shows which files directly or indirectly include this file:



## Classes

- class [CDP\\_BatteryParser](#)  
*The Battery Packets Parsing Class.*

## Macros

- #define [CDP\\_PACKETLEN\\_MAX](#) (UINT32\_MAX/UINT8\_MAX)  
*This macro is used to limit the max packet length.*

### 5.9.1 Detailed Description

Battery Parser Class.

Author

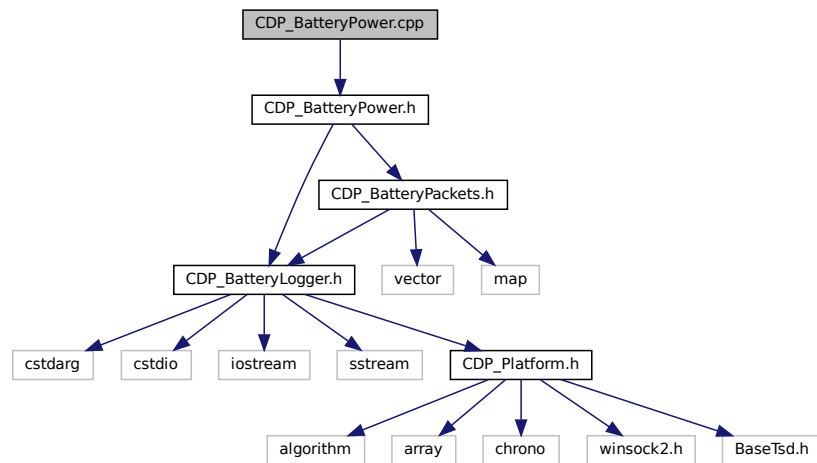
Subhasish Ghosh

## 5.10 CDP\_BatteryPower.cpp File Reference

Battery Power Class.

```
#include "CDP_BatteryPower.h"
```

Include dependency graph for CDP\_BatteryPower.cpp:



### 5.10.1 Detailed Description

Battery Power Class.

Author

Subhasish Ghosh

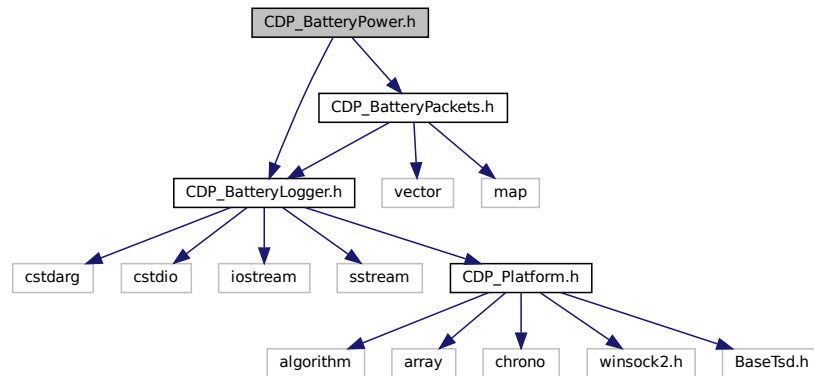
## 5.11 CDP\_BatteryPower.h File Reference

Battery Power Class.

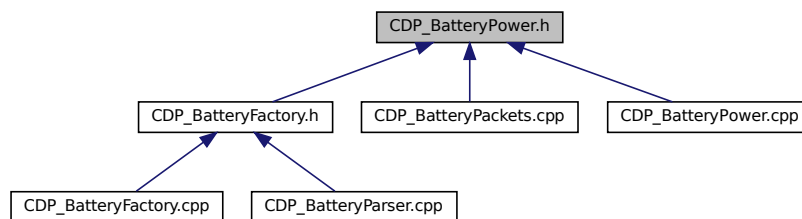
```
#include "CDP_BatteryLogger.h"
```

```
#include "CDP_BatteryPackets.h"
```

Include dependency graph for CDP\_BatteryPower.h:



This graph shows which files directly or indirectly include this file:



## Classes

- class [CDP\\_BatteryPower](#)  
*The Singleton Battery Power Class.*

## Macros

- `#define` [CDP\\_BATTERYPOWER\\_DEBOUNCE\\_MS](#) 10  
*Macro defining the debounce signal timing in milli-seconds.*

### 5.11.1 Detailed Description

Battery Power Class.

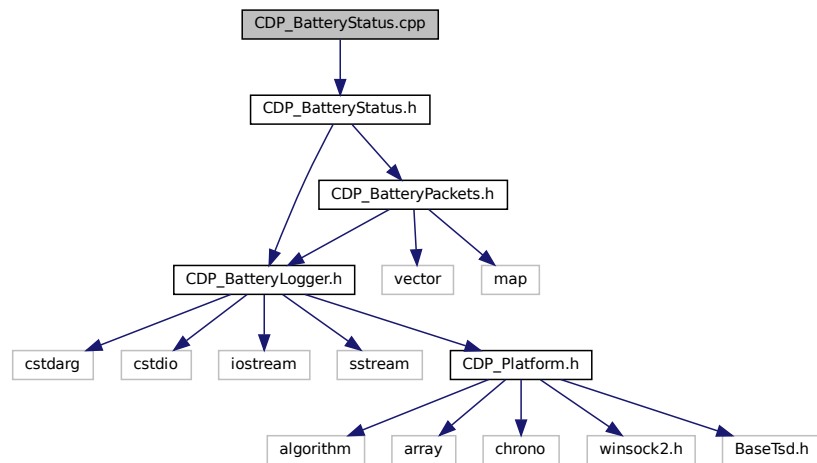
#### Author

Subhasish Ghosh

## 5.12 CDP\_BatteryStatus.cpp File Reference

Battery Status Class.

```
#include "CDP_BatteryStatus.h"
Include dependency graph for CDP_BatteryStatus.cpp:
```



### 5.12.1 Detailed Description

Battery Status Class.

Author

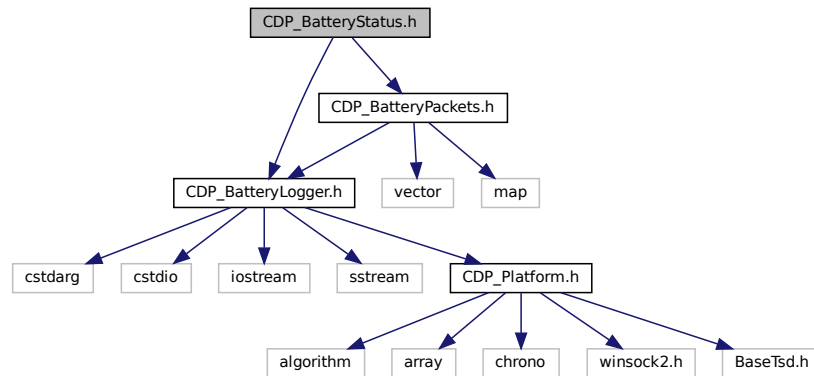
Subhasish Ghosh

## 5.13 CDP\_BatteryStatus.h File Reference

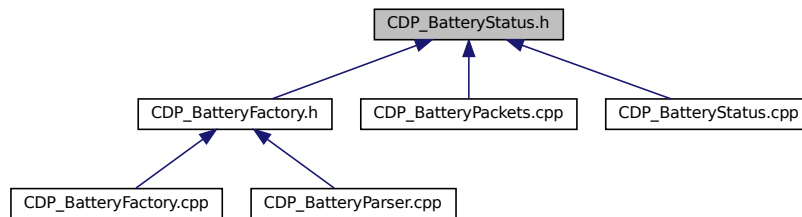
Battery Status Class.

```
#include "CDP_BatteryLogger.h"
#include "CDP_BatteryPackets.h"
```

Include dependency graph for CDP\_BatteryStatus.h:



This graph shows which files directly or indirectly include this file:



## Classes

- class [CDP\\_BatteryStatus](#)

*The Singleton Battery Status Class.*

### 5.13.1 Detailed Description

Battery Status Class.

Author

Subhasish Ghosh

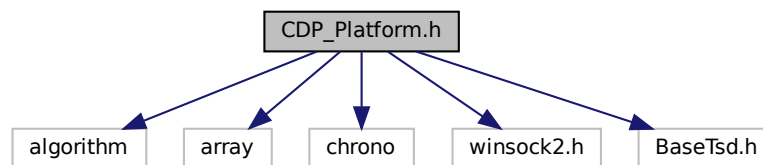


## 5.14 CDP\_Platform.h File Reference

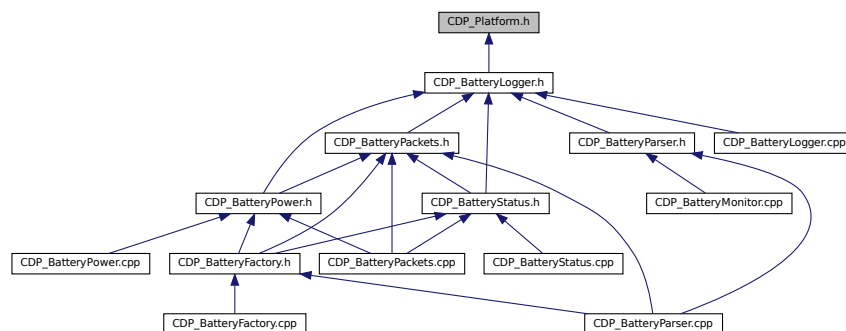
Generic Header for Windows or Linux based compilation.

```
#include <algorithm>
#include <array>
#include <chrono>
#include <winsock2.h>
#include <BaseTsd.h>
```

Include dependency graph for CDP\_Platform.h:



This graph shows which files directly or indirectly include this file:



### Macros

- `#define cdp_ntohl(a) ntohs(a)`
- `#define cdp_ntohll(a) ntohll(a)`
- `#define PACK(__Declaration__) __pragma( pack(push, 1) ) __Declaration__ __pragma( pack(pop))`

### Typedefs

- `typedef SSIZE_T ssize_t`

#### 5.14.1 Detailed Description

Generic Header for Windows or Linux based compilation.

#### Author

Subhasish Ghosh



# Index

- CDP\_BatteryFactory, [7](#)
  - getPacketObj, [8](#)
- CDP\_BatteryFactory.cpp, [29](#)
- CDP\_BatteryFactory.h, [30](#)
- CDP\_BatteryLogger, [8](#)
  - cdp\_dbg, [10](#)
  - cdp\_info, [10](#)
  - getLogLevel, [10](#)
  - setLogLevel, [11](#)
- CDP\_BatteryLogger.cpp, [31](#)
- CDP\_BatteryLogger.h, [31](#)
- CDP\_BatteryMonitor.cpp, [32](#)
  - main, [33](#)
- CDP\_BatteryPackets, [11](#)
  - CDP\_BatteryPacketsType, [13](#)
  - default\_PktHandler, [13](#)
  - get\_dataLen, [14](#)
  - get\_error, [14](#)
  - get\_name, [14](#)
  - get\_type, [15](#)
  - step, [15](#)
- CDP\_BatteryPackets.cpp, [33](#)
  - getPacketObjMap, [34](#)
- CDP\_BatteryPackets.h, [35](#)
  - getPacketObjMap, [36](#)
- CDP\_BatteryPacketsType
  - CDP\_BatteryPackets, [13](#)
- CDP\_BatteryParser, [16](#)
  - cdp\_dbg, [17](#)
  - run, [17](#)
- CDP\_BatteryParser.cpp, [36](#)
- CDP\_BatteryParser.h, [37](#)
- CDP\_BatteryPower, [18](#)
  - cdp\_dbg, [20](#)
  - cdp\_info, [20](#)
  - get\_dataLen, [20](#)
  - get\_error, [21](#)
  - get\_name, [21](#)
  - get\_type, [22](#)
  - getObj, [22](#)
  - step, [22](#)
- CDP\_BatteryPower.cpp, [39](#)
- CDP\_BatteryPower.h, [39](#)
- CDP\_BatteryStatus, [23](#)
  - cdp\_dbg, [25](#)
  - cdp\_info, [25](#)
  - get\_dataLen, [25](#)
  - get\_error, [26](#)
  - get\_name, [26](#)
  - get\_type, [27](#)
  - getObj, [27](#)
  - step, [27](#)
- CDP\_BatteryStatus.cpp, [41](#)
- CDP\_BatteryStatus.h, [41](#)
- cdp\_dbg
  - CDP\_BatteryLogger, [10](#)
  - CDP\_BatteryParser, [17](#)
  - CDP\_BatteryPower, [20](#)
  - CDP\_BatteryStatus, [25](#)
- cdp\_info
  - CDP\_BatteryLogger, [10](#)
  - CDP\_BatteryPower, [20](#)
  - CDP\_BatteryStatus, [25](#)
- CDP\_Platform.h, [43](#)
- default\_PktHandler
  - CDP\_BatteryPackets, [13](#)
- get\_dataLen
  - CDP\_BatteryPackets, [14](#)
  - CDP\_BatteryPower, [20](#)
  - CDP\_BatteryStatus, [25](#)
- get\_error
  - CDP\_BatteryPackets, [14](#)
  - CDP\_BatteryPower, [21](#)
  - CDP\_BatteryStatus, [26](#)
- get\_name
  - CDP\_BatteryPackets, [14](#)
  - CDP\_BatteryPower, [21](#)
  - CDP\_BatteryStatus, [26](#)
- get\_type
  - CDP\_BatteryPackets, [15](#)
  - CDP\_BatteryPower, [22](#)
  - CDP\_BatteryStatus, [27](#)
- getLogLevel
  - CDP\_BatteryLogger, [10](#)
- getObj
  - CDP\_BatteryPower, [22](#)
  - CDP\_BatteryStatus, [27](#)
- getPacketObj
  - CDP\_BatteryFactory, [8](#)
- getPacketObjMap
  - CDP\_BatteryPackets.cpp, [34](#)
  - CDP\_BatteryPackets.h, [36](#)
- main
  - CDP\_BatteryMonitor.cpp, [33](#)
- run

CDP\_BatteryParser, [17](#)

setLogLevel

CDP\_BatteryLogger, [11](#)

step

CDP\_BatteryPackets, [15](#)

CDP\_BatteryPower, [22](#)

CDP\_BatteryStatus, [27](#)