

GSM Engine 1.0.0

Generic Engine for MikroElektronika's GSM Click Boards

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Library Info

Date

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Author

Milos Vidojevic

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Version

1.0.0 - Initial testing and verification

Generated by  1.8.9.1

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Test Configurations

Test configuration 1 :

- **MCU** : STM32F107VC
- **Dev. Board** : EasyMx Pro v7
- **Oscillator** : 72 Mhz internal
- **Ext. Modules** : GSM Click
- **SW** : MikroC PRO for ARM 4.7.1

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Data Structures

Here are the data structures with brief descriptions:

 at_cmd_t	AT Parser Structure
---	---------------------

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at_cmd_t Struct Reference

AT Parser Structure. [More...](#)

```
#include <at_parser.h>
```

Data Fields

uint32_t	hash Command Hash Value.
uint32_t	timeout Command Timeout.
at_cmd_cb	getter Get Callback.
at_cmd_cb	setter Set Callback.
at_cmd_cb	tester Test Callback.
at_cmd_cb	executer Execute Callback.

Detailed Description

AT Parser Structure.

This struct is used for storing the command with timeout and callbacks. Command strings are converted to the hash code for easiest comparison.

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

- [at_parser.h](#)
-

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Data Structure Index

[A](#)[a](#)[at_cmd_t](#)[A](#)

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Here is a list of all documented struct and union fields with links to the struct/union documentation for each field:

- `executer` : [at_cmd_t](#)
- `getter` : [at_cmd_t](#)
- `hash` : [at_cmd_t](#)
- `setter` : [at_cmd_t](#)
- `tester` : [at_cmd_t](#)
- `timeout` : [at_cmd_t](#)

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- `executer` : [at_cmd_t](#)
- `getter` : [at_cmd_t](#)
- `hash` : [at_cmd_t](#)
- `setter` : [at_cmd_t](#)
- `tester` : [at_cmd_t](#)
- `timeout` : [at_cmd_t](#)












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File List

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

 at_config.h	GSM Engine and AT Parser Configuration
 at_parser.c	AT Parser
 at_parser.h	AT Parser
 at_timer.c	AT Timer
 at_timer.h	AT Timer
 gsm_adapter.c	GSM Adapter
 gsm_adapter.h	GSM Adapter
 gsm_engine.c	GSM Engine
 gsm_engine.h	GSM Engine
 gsm_hal.c	GSM HAL layer
 gsm_hal.h	GSM HAL layer

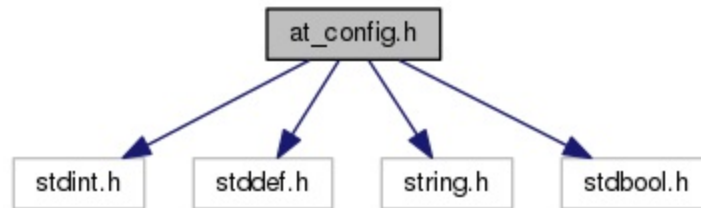
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at_config.h File Reference

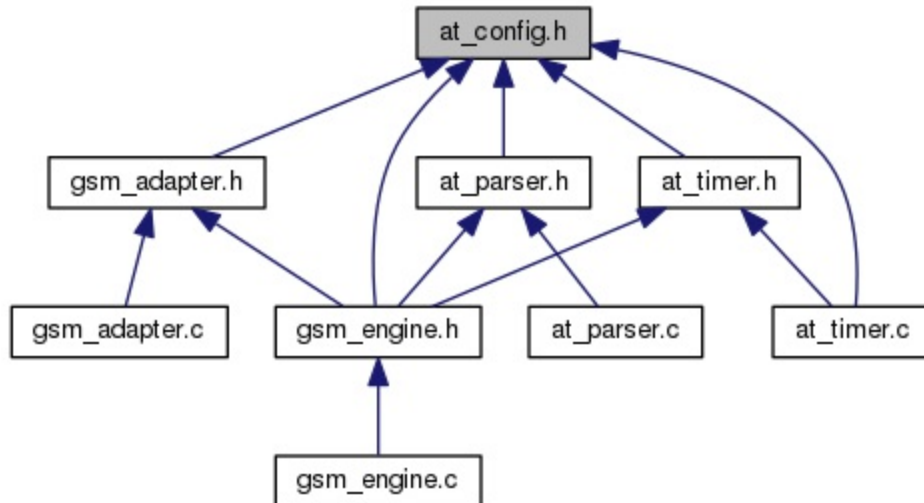
GSM Engine and AT Parser Configuration. [More...](#)

```
#include <stdint.h> #include <stddef.h>
#include <string.h>
#include <stdbool.h>
```

Include dependency graph for at_config.h:



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



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

Macros

```
#define AT_HEAD "AT"
```

```
#define AT_HEAD_SIZE 2
```

```
#define AT_CMS_ERROR "+CMS ERROR:"
```

```
#define AT_CMS_ERROR_SIZE 11
```

```
#define AT_HEADER_SIZE 15
```

```
#define AT_STORAGE_SIZE 50
```

```
#define AT_TRANSFER_SIZE 256
```

```
#define DEFAULT_TIMEOUT 500
```

Detailed Description

GSM Engine and AT Parser Configuration.

#define AT_CMS_ERROR "+CMS ERROR:"

General Error Message

#define AT_HEAD "AT"

AT Head

#define AT_HEADER_SIZE 15

Size of AT command. This should represent maximum size of request header

#define AT_STORAGE_SIZE 50

Size of command storage. This represent number of commands that can be stored to the module and later recognized by the library.

#define AT_TRANSFER_SIZE 256

Size of RX and TX buffers inside the [at_buffer.h](#) This is the maximum amount of characters that can be transfered per one sequence in both directions.

#define DEFAULT_TIMEOUT 500

Default timeout in milliseconds for the specific module

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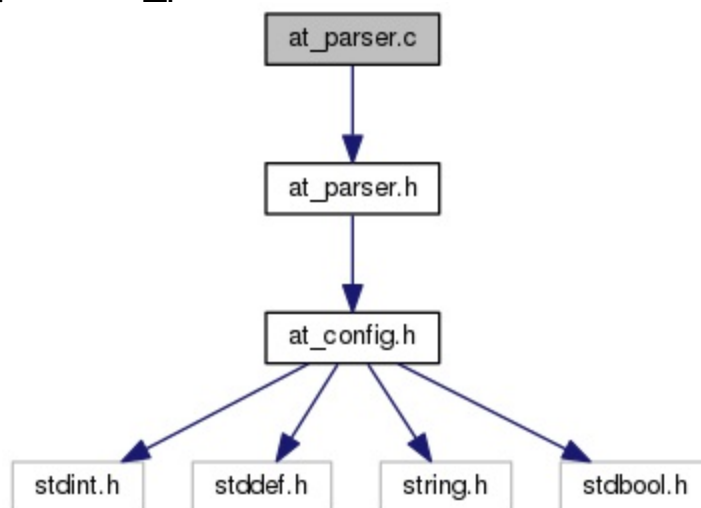
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at_parser.c File Reference

AT Parser. [More...](#)

```
#include "at_parser.h"
```

Include dependency graph for at_parser.c:



Functions

void **at_parser_init** ()
AT Parser Initialization. [More...](#)

void **at_parser_store** (char *command, uint32_t timeout, at_cmd_cb getter, at_cmd_cb setter, at_cmd_cb tester, at_cmd_cb executor)
Store AT Command. [More...](#)

void **at_parse** (char *input, at_cmd_cb *cb, uint32_t *timeout)
Parse AT Command. [More...](#)

Detailed Description

AT Parser.

Function Documentation

```
void at_parse ( char *      input,  
                at_cmd_cb * cb,  
                uint32_t *  timeout  
              )
```

Parse AT Command.

Parses provided input and sets the callback and timeout for provided input.

Parameters

[in] **cmd**
[out] **cb**
[out] **timeout**

```
void at_parser_init ( )
```

AT Parser Initialization.

Note

Must be executed before any other operation.

```
void at_parser_store ( char *      command,  
                      uint32_t    timeout,  
                      at_cmd_cb  getter,  
                      at_cmd_cb  setter,  
                      at_cmd_cb  test,  
                      at_cmd_cb  execute  
                    )
```

Store AT Command.

Stores the command and function pointers for command provided.

Parameters

[in] **command**
[in] **timeout**
[in] **getter** callback

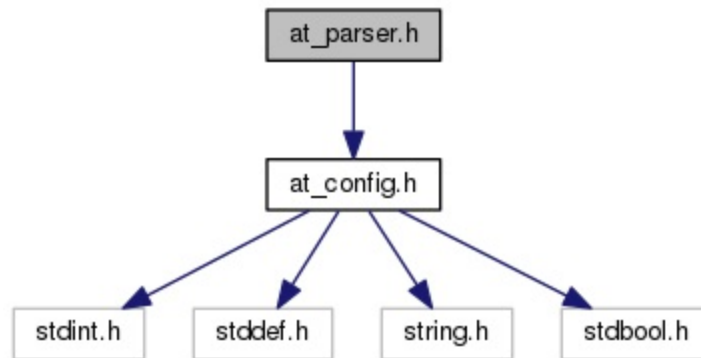
```
[in] setter      callback  
[in] tester     callback  
[in] executer   callback
```

at_parser.h File Reference

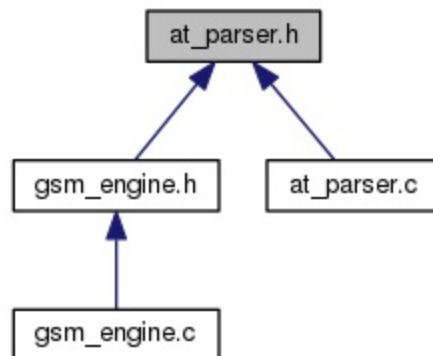
AT Parser. [More...](#)

```
#include "at_config.h"
```

Include dependency graph for at_parser.h:



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



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

Data Structures

struct **at_cmd_t**
AT Parser Structure. [More...](#)

Typedefs

```
typedef void(* at_cmd_cb) (char *buffer)
```

Enumerations

```
enum at_type_t {  
    AT_CMD_UNKNOWN = 0, AT_CMD_GET = 1, AT_CMD_SET = 2,  
    AT_CMD_TEST = 3,  
    AT_CMD_EXEC = 4  
}
```

Functions

void **at_parser_init** ()
AT Parser Initialization. [More...](#)

void **at_parser_store** (char *command, uint32_t timeout, at_cmd_cb getter, at_cmd_cb setter, at_cmd_cb test, at_cmd_cb execute)
Store AT Command. [More...](#)

void **at_parse** (char *input, at_cmd_cb *cb, uint32_t *timeout)
Parse AT Command. [More...](#)

Detailed Description

AT Parser.

Parser for AT commands.

Enumeration Type Documentation

enum at_type_t

Enumerator	
AT_CMD_UNKNOWN	Unknown command
AT_CMD_GET	AT Get command
AT_CMD_SET	AT Set command
AT_CMD_TEST	AT Test command
AT_CMD_EXEC	AT Execute command

Function Documentation

```
void at_parse ( char *      input,
                at_cmd_cb * cb,
                uint32_t *   timeout
              )
```

Parse AT Command.

Parses provided input and sets the callback and timeout for provided input.

Parameters

[in] **cmd**
[out] **cb**
[out] **timeout**

```
void at_parser_init ( )
```

AT Parser Initialization.

Note

Must be executed before any other operation.

```
void at_parser_store ( char *      command,
                      uint32_t    timeout,
                      at_cmd_cb   getter,
                      at_cmd_cb   setter,
                      at_cmd_cb   test,
                      at_cmd_cb   execute
                    )
```

Store AT Command.

Stores the command and function pointers for command provided.

Parameters

[in] **command**
[in] **timeout**
[in] **getter** callback

```
[in] setter      callback  
[in] tester     callback  
[in] executer   callback
```

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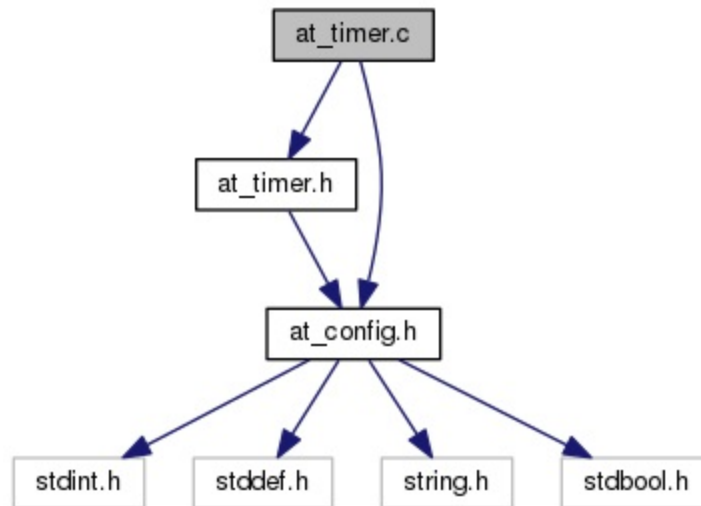
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at_timer.c File Reference

AT Timer. [More...](#)

```
#include "at_timer.h" #include "at_config.h"
```

Include dependency graph for at_timer.c:



Functions

void **at_timer_init** ()
AT Timer Initialisation. [More...](#)

void **at_tick_isr** (void)
Tick ISR. [More...](#)

void **at_timer_start** (void)
AT Timer Start. [More...](#)

void **at_timer_restart** (void)
AT Timer Restart. [More...](#)

void **at_timer_stop** (void)
AT Timer Stop. [More...](#)

void **at_timer_load** (uint32_t timeout)
AT Timer Load. [More...](#)

Detailed Description

AT Timer.

Function Documentation

void at_tick_isr (void)

Tick ISR.

This must be placed inside the ISR function that is going to be executed every one millisecond

void at_timer_init (void)

AT Timer Initialisation.

Must be executed before any other timer operation

void at_timer_load (uint32_t **timeout)**

AT Timer Load.

Load new timer

Parameters

[in] **timeout** (milliseconds)

void at_timer_restart (void)

AT Timer Restart.

Restart the timer

void at_timer_start (void)

AT Timer Start.

Starts the timer

void at_timer_stop (void)

AT Timer Stop.

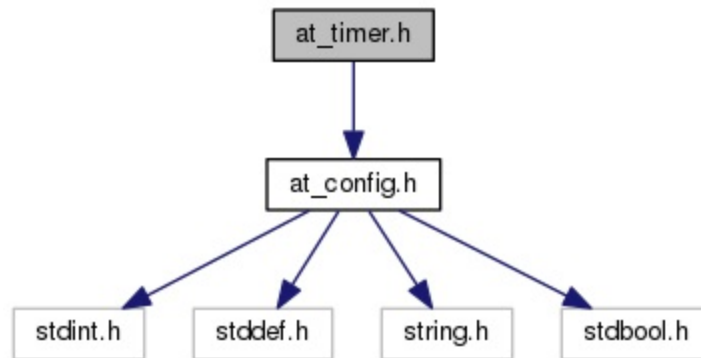
Stops the timer

at_timer.h File Reference

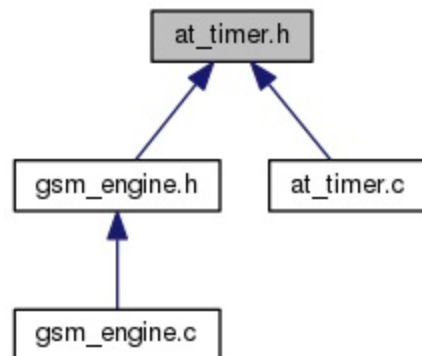
AT Timer. [More...](#)

```
#include "at_config.h"
```

Include dependency graph for at_timer.h:



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



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

Functions

void **at_timer_init** (void)
AT Timer Initialisation. [More...](#)

void **at_tick_isr** (void)
Tick ISR. [More...](#)

void **at_timer_start** (void)
AT Timer Start. [More...](#)

void **at_timer_restart** (void)
AT Timer Restart. [More...](#)

void **at_timer_stop** (void)
AT Timer Stop. [More...](#)

void **at_timer_load** (uint32_t timeout)
AT Timer Load. [More...](#)

Variables

volatile bool **timeout_f**

Detailed Description

AT Timer.

Timer for GSM engine

Function Documentation

void at_tick_isr (void)

Tick ISR.

This must be placed inside the ISR function that is going to be executed every one millisecond

void at_timer_init (void)

AT Timer Initialisation.

Must be executed before any other timer operation

void at_timer_load (uint32_t **timeout)**

AT Timer Load.

Load new timer

Parameters

[in] **timeout** (milliseconds)

void at_timer_restart (void)

AT Timer Restart.

Restart the timer

void at_timer_start (void)

AT Timer Start.

Starts the timer

void at_timer_stop (void)

AT Timer Stop.

Stops the timer

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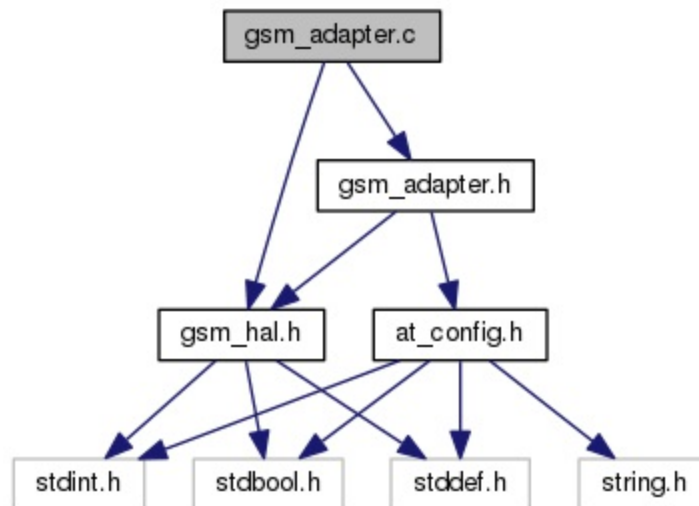
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gsm_adapter.c File Reference

GSM Adapter. [More...](#)

```
#include "gsm_adapter.h" #include "gsm_hal.h"
```

Include dependency graph for gsm_adapter.c:



Functions

void **at_adapter_init** (void)
Adapter Init. [More...](#)

void **at_adapter_reset** (void)
GSM Adapter Reset. [More...](#)

int **at_adapter_tx** (char tx_input)
GSM Transmit. [More...](#)

void **at_adapter_rx** (char rx_input)
GSM Receive. [More...](#)

Detailed Description

GSM Adapter.

void at_adapter_init (void)

Adapter Init.

Must be called before any usage of adapter functions

void at_adapter_reset (void)

GSM Adapter Reset.

Resets the receive flags. This function must be executed after any successfull or unsuccessful transmission on RX.

void at_adapter_rx (char rx_input)

GSM Receive.

This function should be placed inside the UART RX interrupt routine.

Parameters

[in] **rx_input** - character received through UART bus

int at_adapter_tx (char tx_input)

GSM Transmit.

Parameters

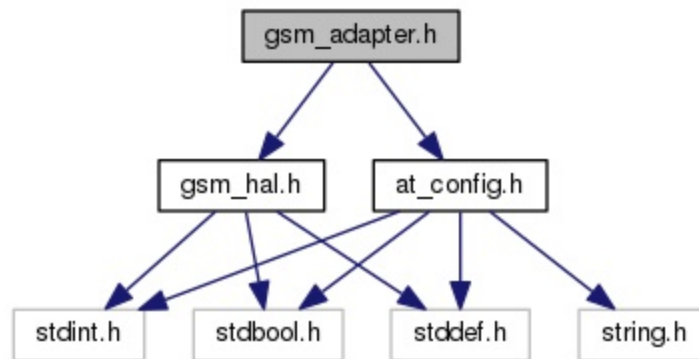
[in] **tx_input** - character that is going to be transmitter through the UART bus

gsm_adapter.h File Reference

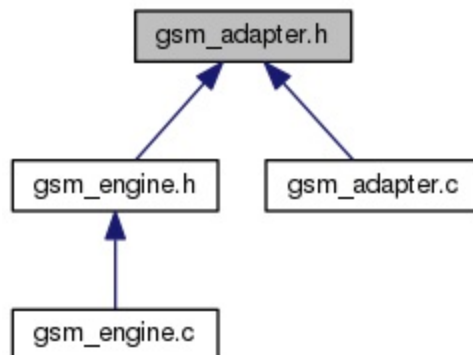
GSM Adapter. [More...](#)

```
#include "gsm_hal.h" #include "at_config.h"
```

Include dependency graph for gsm_adapter.h:



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



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

Functions

void **at_adapter_init** (void)
Adapter Init. [More...](#)

void **at_adapter_reset** (void)
GSM Adapter Reset. [More...](#)

int **at_adapter_tx** (char tx_input)
GSM Transmit. [More...](#)

void **at_adapter_rx** (char rx_input)
GSM Receive. [More...](#)

Variables

volatile bool	exception_f	
volatile bool	response_f	
volatile bool	cue_f	
volatile char	tx_buffer	[AT_TRANSFER_SIZE]
volatile char	rx_buffer	[AT_TRANSFER_SIZE]

Detailed Description

GSM Adapter.

Adapter for specific GSM module.

void at_adapter_init (void)

Adapter Init.

Must be called before any usage of adapter functions

void at_adapter_reset (void)

GSM Adapter Reset.

Resets the receive flags. This function must be executed after any successfull or unsuccessful transmission on RX.

void at_adapter_rx (char rx_input)

GSM Receive.

This function should be placed inside the UART RX interrupt routine.

Parameters

[in] **rx_input** - character received through UART bus

int at_adapter_tx (char tx_input)

GSM Transmit.

Parameters

[in] **tx_input** - character that is going to be transmitter through the UART bus

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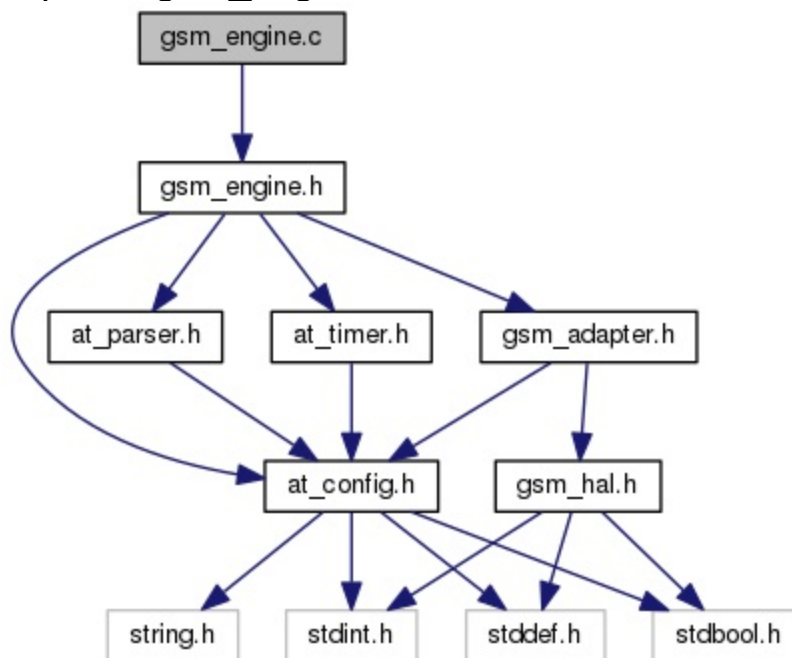
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gsm_engine.c File Reference

GSM Engine. [More...](#)

```
#include "gsm_engine.h"
```

Include dependency graph for gsm_engine.c:



Functions

void **gsm_engine_init** (at_cmd_cb default_callback)
AT Engine Initialization. [More...](#)

void **at_cmd** (char *input)
AT Command. [More...](#)

void **at_cmd_addition** (char *input)
AT Addition. [More...](#)

void **at_cmd_save** (char *cmd, uint32_t timeout, at_cmd_cb getter, at_cmd_cb setter, at_cmd_cb tester, at_cmd_cb executer)
Save AT Command to Storage. [More...](#)

void **gsm_process** ()
AT Process. [More...](#)

Variables

volatile bool	timeout_f
volatile bool	exception_f
volatile bool	response_f
volatile bool	cue_f
volatile char	tx_buffer [AT_TRANSFER_SIZE]
volatile char	rx_buffer [AT_TRANSFER_SIZE]

Detailed Description

GSM Engine.

Function Documentation

void at_cmd (char * **input)**

AT Command.

Executes provided AT command

Parameters

[in] **input**

void at_cmd_addition (char * **input)**

AT Addition.

Some AT commands requires additional data, this function is used to add the data after the module resposes with specific output.

Parameters

[in] **input**

void at_cmd_save (char * **cmd,
 uint32_t **timeout**,
 at_cmd_cb **setter**,
 at_cmd_cb **getter**,
 at_cmd_cb **tester**,
 at_cmd_cb **executer**
)**

Save AT Command to Storage.

Saves provided command with callbacks and timeout to the storage for later parsing.

Parameters

[in] **cmd**

[in] **timeout**

[in] **setter**

[in] **getter**

[in] **tester**

void gsm_engine_init (at_cmd_cb default_callback)

AT Engine Initialization.

Initialization of engine should be done before execution of any other function.

void gsm_process (void)

AT Process.

This function should be placed inside the infinite while loop.

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Generic Engine for MikroElektronika's GSM Click Boards

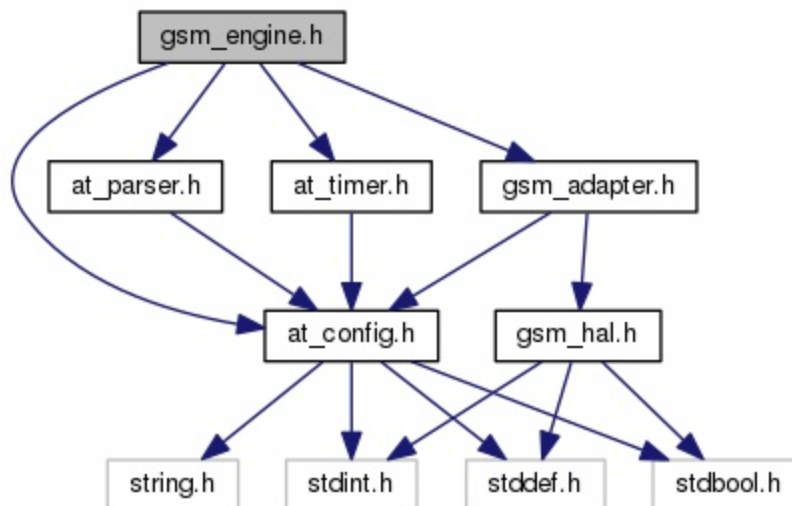
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gsm_engine.h File Reference

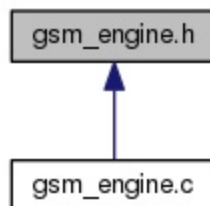
GSM Engine. [More...](#)

```
#include "at_config.h" #include "at_parser.h"
#include "at_timer.h"
#include "gsm_adapter.h"
```

Include dependency graph for gsm_engine.h:



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



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

Functions

void **gsm_engine_init** (at_cmd_cb default_callback)
AT Engine Initialization. [More...](#)

void **at_cmd** (char *input)
AT Command. [More...](#)

void **at_cmd_addition** (char *input)
AT Addition. [More...](#)

void **at_cmd_save** (char *cmd, uint32_t timeout, at_cmd_cb setter, at_cmd_cb getter, at_cmd_cb tester, at_cmd_cb executer)
Save AT Command to Storage. [More...](#)

void **gsm_process** (void)
AT Process. [More...](#)

Detailed Description

GSM Engine.

Engine for GSM modules.

Function Documentation

void at_cmd (char * **input)**

AT Command.

Executes provided AT command

Parameters

[in] **input**

void at_cmd_addition (char * **input)**

AT Addition.

Some AT commands requires additional data, this function is used to add the data after the module responses with specific output.

Parameters

[in] **input**

void at_cmd_save (char * **cmd,
 uint32_t **timeout**,
 at_cmd_cb **setter**,
 at_cmd_cb **getter**,
 at_cmd_cb **tester**,
 at_cmd_cb **executer**
)**

Save AT Command to Storage.

Saves provided command with callbacks and timeout to the storage for later parsing.

Parameters

[in] **cmd**

[in] **timeout**

[in] **setter**

[in] **getter**

[in] **tester**

void gsm_engine_init (at_cmd_cb default_callback)

AT Engine Initialization.

Initialization of engine should be done before execution of any other function.

void gsm_process (void)

AT Process.

This function should be placed inside the infinite while loop.

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Generic Engine for MikroElektronika's GSM Click Boards

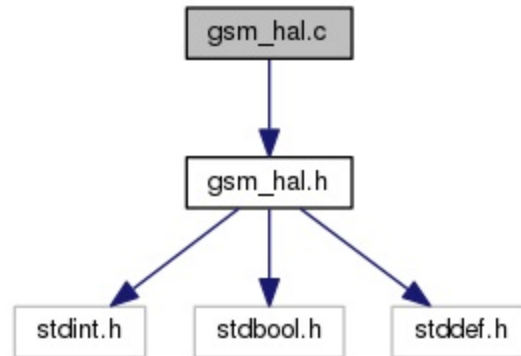
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gsm_hal.c File Reference

GSM HAL layer. [More...](#)

```
#include "gsm_hal.h"
```

Include dependency graph for gsm_hal.c:



Functions

void **gsm_hal_reset** (void)
Hardware Reset. [More...](#)

bool **gsm_tx_ctl** ()
RTS. [More...](#)

void **gsm_rx_ctl** (bool state)
CTS. [More...](#)

void **gsm_hal_init** ()
HAL Initialization. [More...](#)

void **gsm_hal_write** (char *buffer)
HAL Write. [More...](#)

Detailed Description

GSM HAL layer.

Function Documentation

void gsm_hal_init (void)

HAL Initialization.

Hal layer initialization. Must be called before any other function.

void gsm_hal_reset (void)

Hardware Reset.

Resets the module via RST PIN

void gsm_hal_write (char * **buffer)**

HAL Write.

Writes data through UART bus

Parameters

[in] **buffer**

void gsm_rx_ctl (bool **state)**

CTS.

Hardware flow control of incoming data

Parameters

[in] **state** of CTS

bool gsm_tx_ctl (void)

RTS.

Hardware flow control of sending data

Return values

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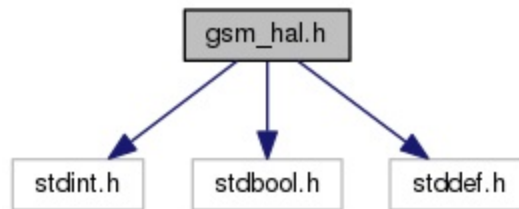
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gsm_hal.h File Reference

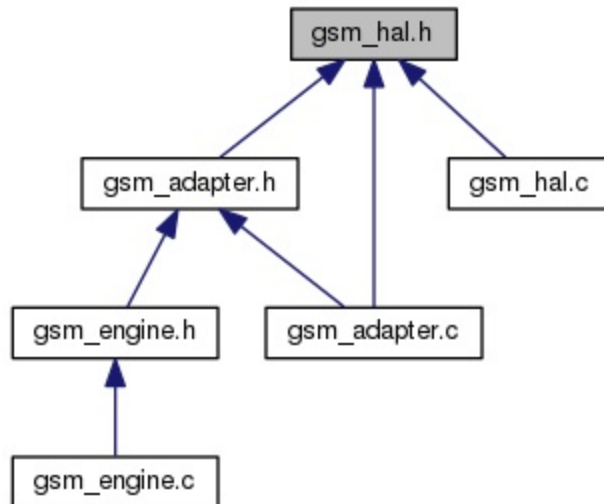
GSM HAL layer. [More...](#)

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

Include dependency graph for gsm_hal.h:



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



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Functions

void **gsm_hal_reset** (void)
Hardware Reset. [More...](#)

bool **gsm_tx_ctl** (void)

RTS. [More...](#)

void **gsm_rx_ctl** (bool state)
CTS. [More...](#)

void **gsm_hal_init** (void)
HAL Initialization. [More...](#)

void **gsm_hal_write** (char *buffer)
HAL Write. [More...](#)

Detailed Description

GSM HAL layer.

HAL layer for GSM engine

Function Documentation

void gsm_hal_init (void)

HAL Initialization.

Hal layer initialization. Must be called before any other function.

void gsm_hal_reset (void)

Hardware Reset.

Resets the module via RST PIN

void gsm_hal_write (char * **buffer)**

HAL Write.

Writes data through UART bus

Parameters

[in] **buffer**

void gsm_rx_ctl (bool **state)**

CTS.

Hardware flow control of incoming data

Parameters

[in] **state** of CTS

bool gsm_tx_ctl (void)

RTS.

Hardware flow control of sending data

Return values

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All		Functions	Enumerations	Enumerator	Macros	
a	d	g				

Here is a list of all documented functions, variables, defines, enums, and typedefs with links to the documentation:

- a -

- `at_adapter_init()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_adapter_reset()` : [gsm_adapter.c](#) , [gsm_adapter.h](#)
- `at_adapter_rx()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_adapter_tx()` : [gsm_adapter.c](#) , [gsm_adapter.h](#)
- `at_cmd()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `at_cmd_addition()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `AT_CMD_EXEC` : [at_parser.h](#)
- `AT_CMD_GET` : [at_parser.h](#)
- `at_cmd_save()` : [gsm_engine.c](#) , [gsm_engine.h](#)
- `AT_CMD_SET` : [at_parser.h](#)
- `AT_CMD_TEST` : [at_parser.h](#)
- `AT_CMD_UNKNOWN` : [at_parser.h](#)
- `AT_CMS_ERROR` : [at_config.h](#)
- `AT_HEAD` : [at_config.h](#)
- `AT_HEADER_SIZE` : [at_config.h](#)
- `at_parse()` : [at_parser.h](#) , [at_parser.c](#)
- `at_parser_init()` : [at_parser.h](#) , [at_parser.c](#)
- `at_parser_store()` : [at_parser.h](#) , [at_parser.c](#)
- `AT_STORAGE_SIZE` : [at_config.h](#)
- `at_tick_isr()` : [at_timer.c](#) , [at_timer.h](#)
- `at_timer_init()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_load()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_restart()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_start()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_stop()` : [at_timer.c](#) , [at_timer.h](#)
- `AT_TRANSFER_SIZE` : [at_config.h](#)
- `at_type_t` : [at_parser.h](#)

- d -

- DEFAULT_TIMEOUT : [at_config.h](#)

- g -

- gsm_engine_init() : [gsm_engine.h](#) , [gsm_engine.c](#)
- gsm_hal_init() : [gsm_hal.c](#) , [gsm_hal.h](#)
- gsm_hal_reset() : [gsm_hal.h](#) , [gsm_hal.c](#)
- gsm_hal_write() : [gsm_hal.c](#) , [gsm_hal.h](#)
- gsm_process() : [gsm_engine.h](#) , [gsm_engine.c](#)
- gsm_rx_ctl() : [gsm_hal.h](#) , [gsm_hal.c](#)
- gsm_tx_ctl() : [gsm_hal.c](#) , [gsm_hal.h](#)

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a	g					

- a -

- `at_adapter_init()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_adapter_reset()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_adapter_rx()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_adapter_tx()` : [gsm_adapter.h](#) , [gsm_adapter.c](#)
- `at_cmd()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `at_cmd_addition()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `at_cmd_save()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `at_parse()` : [at_parser.h](#) , [at_parser.c](#)
- `at_parser_init()` : [at_parser.h](#) , [at_parser.c](#)
- `at_parser_store()` : [at_parser.h](#) , [at_parser.c](#)
- `at_tick_isr()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_init()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_load()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_restart()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_start()` : [at_timer.h](#) , [at_timer.c](#)
- `at_timer_stop()` : [at_timer.h](#) , [at_timer.c](#)

- g -

- `gsm_engine_init()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `gsm_hal_init()` : [gsm_hal.h](#) , [gsm_hal.c](#)
- `gsm_hal_reset()` : [gsm_hal.h](#) , [gsm_hal.c](#)
- `gsm_hal_write()` : [gsm_hal.h](#) , [gsm_hal.c](#)
- `gsm_process()` : [gsm_engine.h](#) , [gsm_engine.c](#)
- `gsm_rx_ctl()` : [gsm_hal.h](#) , [gsm_hal.c](#)
- `gsm_tx_ctl()` : [gsm_hal.h](#) , [gsm_hal.c](#)

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- `at_type_t` : [at_parser.h](#)

Generated by [doxygen](#) 1.8.9.1

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- AT_CMD_EXEC : [at_parser.h](#)
- AT_CMD_GET : [at_parser.h](#)
- AT_CMD_SET : [at_parser.h](#)
- AT_CMD_TEST : [at_parser.h](#)
- AT_CMD_UNKNOWN : [at_parser.h](#)

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- AT_CMS_ERROR : [at_config.h](#)
- AT_HEAD : [at_config.h](#)
- AT_HEADER_SIZE : [at_config.h](#)
- AT_STORAGE_SIZE : [at_config.h](#)
- AT_TRANSFER_SIZE : [at_config.h](#)
- DEFAULT_TIMEOUT : [at_config.h](#)

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Related Pages

Here is a list of all related documentation pages:

[Library Info](#)[Test Configurations](#)

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at_parser.h

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

```
1  /*****
   *****/
2  * Title           :   AT_PARSER
3  * Filename        :   at_parser.h
4  * Author          :   MSV
5  * Origin Date     :   10/03/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials      Description
11 *  10/03/16      1.0.0                MSV            Interface
   Created.
12 *
13 *****/
   *****/
21 #ifndef AT_PARSER_H
22 #define AT_PARSER_H
23 /*****
   *****/
24 * Includes
25 *****/
   *****/
26 #include "at_config.h"
27 /*****
   *****/
28 * Preprocessor Constants
29 *****/
```

```

30  /**
31  /*****
32  * Configuration Constants
33  *****/
34
35  /*****
36  * Macros
37  *****/
38
39  /*****
40  * Typedefs
41  *****/
42  typedef void ( *at_cmd_cb )( char *buffer );
43
44  typedef enum
45  {
46      AT_CMD_UNKNOWN            = 0,
47      AT_CMD_GET                = 1,
48      AT_CMD_SET                = 2,
49      AT_CMD_TEST               = 3,
50      AT_CMD_EXEC               = 4,
51
52  }at_type_t;
53
54  typedef struct
55  {
56      uint32_t                hash;
57      uint32_t                timeout;
58      at_cmd_cb               getter;
59      at_cmd_cb               setter;
60      at_cmd_cb               tester;
61      at_cmd_cb               executer;
62
63  }at_cmd_t;
64
65  /*****

```

```

99  * Variables
100  ****
101  ****/
102  /*****
103  * Function Prototypes
104  ****
105  ****/
105  #ifdef __cplusplus
106  extern "C"{
107  #endif
108
115  void at_parser_init();
116
130  void at_parser_store( char *command,
131                      uint32_t timeout,
132                      at_cmd_cb getter,
133                      at_cmd_cb setter,
134                      at_cmd_cb test,
135                      at_cmd_cb execute );
136
147  void at_parse( char *input,
148                at_cmd_cb *cb,
149                uint32_t *timeout );
150
151  #ifdef __cplusplus
152  } // extern "C"
153  #endif
154
155  #endif /* AT_PARSER_H */
156  /*** End of File
157  ****
158  ****/

```

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at_config.h

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

```
1  /*****
   *****/
2  * Title           :   AT CONFIGURARTION
3  * Filename        :   at_config.h
4  * Author          :   MSV
5  * Origin Date     :   10/03/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials      Description
11 *  10/03/16      1.0.0                MSV            Interface
   Created.
12 *
13 *****/
   *****/
18 #ifndef AT_CONFIG_H
19 #define AT_CONFIG_H
20 /*****
   *****/
21 * Includes
22 *****/
   *****/
23 #include <stdint.h>
24 #include <stddef.h>
25 #include <string.h>
26 #include <stdbool.h>
27 /*****
```



```

*****
28  * Preprocessor Constants
29  *****
    *****/
32  #define AT_HEAD
    "AT"
33  #define AT_HEAD_SIZE
    2
34
36  #define AT_CMS_ERROR
    "+CMS ERROR:"
37  #define AT_CMS_ERROR_SIZE
    11
38
40  #define AT_HEADER_SIZE
    15
41
44  #define AT_STORAGE_SIZE
    50
45
50  #define AT_TRANSFER_SIZE
    256
51
53  #define DEFAULT_TIMEOUT
    500
54  /*****
    *****/
55  * Typedefs
56  *****
    *****/
57
58  /*****
    *****/
59  * Module Variable Definitions
60  *****
    *****/
61
62  #endif // AT_CONFIG_H
63  /*****End of File
    *****/

```

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at_timer.h

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

```
1  /*****
   *****/
2  * Title           :   AT_TIMER
3  * Filename        :   at_timer.h
4  * Author          :   MSV
5  * Origin Date     :   10/03/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials      Description
11 *  10/03/16      XXXXXXXXXXXX          MSV            Interface
   Created.
12 *
13 *****/
   *****/
21 #ifndef AT_TIMER_H
22 #define AT_TIMER_H
23 /*****
   *****/
24 * Includes
25 *****/
   *****/
26 #include "at_config.h"
27 /*****
   *****/
28 * Preprocessor Constants
29 *****/
```

```

*****/
30
31 /*****
*****
32 * Configuration Constants
33 *****/
*****/
34
35 /*****
*****
36 * Macros
37 *****/
*****/
38
39 /*****
*****
40 * Typedefs
41 *****/
*****/
42
43 /*****
*****
44 * Variables
45 *****/
*****/
46 extern volatile bool
    timeout_f;
47 /*****
*****
48 * Function Prototypes
49 *****/
*****/
50 #ifdef __cplusplus
51 extern "C"{
52 #endif
53
60 void at_timer_init( void );
61
69 void at_tick_isr( void );
70
77 void at_timer_start( void );
78
85 void at_timer_restart( void );

```

```
86
93 void at_timer_stop( void );
94
103 void at_timer_load( uint32_t timeout );
104
105 #ifdef __cplusplus
106 } // extern "C"
107 #endif
108
109 #endif // AT_SUB_ENGINE_H
110 /*****End of File
      *****/
```

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gsm_adapter.h

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

```
1  /*****
   *****/
2  * Title           :   GSM ADAPTER
3  * Filename        :   gsm_adapter.h
4  * Author          :   MSV
5  * Origin Date     :   10/03/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials      Description
11 *  10/03/16      1.0.0                  MSV           Interface
   Created.
12 *
13 *****/
   *****/
21 #ifndef GSM_ADAPTER_H
22 #define GSM_ADAPTER_H
23 /*****
   *****/
24 * Includes
25 *****/
   *****/
26 #include "gsm_hal.h"
27 #include "at_config.h"
28 /*****
   *****/
29 * Preprocessor Constants
```

```

30  ****
    ****/
31
32  /*****
    ****
33  * Configuration Constants
34  ****
    ****/
35
36  /*****
    ****
37  * Macros
38  ****
    ****/
39
40  /*****
    ****
41  * Typedefs
42  ****
    ****/
43
44  /*****
    ****
45  * Variables
46  ****
    ****/
47  extern volatile bool          exception_f;
48  extern volatile bool          response_f;
49  extern volatile bool          cue_f;
50
51  extern volatile char           tx_buffer[
    AT_TRANSFER_SIZE ];
52  extern volatile char           rx_buffer[
    AT_TRANSFER_SIZE ];
53  /*****
    ****
54  * Function Prototypes
55  ****
    ****/
56  #ifdef __cplusplus
57  extern "C"{
58  #endif
59

```

```
66 void at_adapter_init( void );
67
75 void at_adapter_reset( void );
76
83 int at_adapter_tx( char tx_input );
84
93 void at_adapter_rx( char rx_input );
94
95 #ifdef __cplusplus
96 } // extern "C"
97 #endif
98
99 #endif // GSM_ADAPTER_H
100 /** End of File
    *****
    *****/
```

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gsm_engine.h

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

```
1  /*****
   *****/
2  * Title           :   GSM ENGINE
3  * Filename        :   gsm_engine.h
4  * Author          :   MSV
5  * Origin Date     :   10/03/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials      Description
11 *  10/03/16      1.0.0                  MSV           Interface
   Created.
12 *
13 *****/
   *****/
47 #ifndef GSM_ENGINE_H
48 #define GSM_ENGINE_H
49 /*****
   *****/
50 * Includes
51 *****/
   *****/
52 #include "at_config.h"
53 #include "at_parser.h"
54 #include "at_timer.h"
55 #include "gsm_adapter.h"
56 /*****
```



```

*****
57  * Preprocessor Constants
58  *****
    ****/
59
60  /*****
    ****
61  * Configuration Constants
62  *****
    ****/
63
64  /*****
    ****
65  * Macros
66  *****
    ****/
67
68  /*****
    ****
69  * Typedefs
70  *****
    ****/
71
72  /*****
    ****
73  * Variables
74  *****
    ****/
75
76  /*****
    ****
77  * Function Prototypes
78  *****
    ****/
79  #ifdef __cplusplus
80  extern "C"{
81  #endif
82
89  void gsm_engine_init( at_cmd_cb default_callback );
90
99  void at_cmd( char *input );
100
110 void at_cmd_addition( char *input );

```

```
111
126 void at_cmd_save( char *cmd,
127                   uint32_t timeout,
128                   at_cmd_cb setter,
129                   at_cmd_cb getter,
130                   at_cmd_cb tester,
131                   at_cmd_cb executer );
132
138 void gsm_process( void );
139
140 #ifdef __cplusplus
141 } // extern "C"
142 #endif
143
144 #endif // GSM_ENGINE_H
145 /*****End of File
      *****/
```

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include

gsm_hal.h

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

```
1  /*****
   *****/
2  * Title           :   GSM HAL
3  * Filename        :   gsm_hal.h
4  * Author          :   MSV
5  * Origin Date     :   01/02/2016
6  * Notes           :   None
7  *****/
   *****/
8  /*****CHANGE LIST
   *****/
9  *
10 *      Date      Software Version      Initials
    Description
11 *  01/02/16      1.0.0                  MSV          Module
    Created.
12 *
13 *****/
   *****/
21 #ifndef GSM_HAL_H
22 #define GSM_HAL_H
23 /*****
   *****/
24 * Includes
25 *****/
   *****/
26 #include <stdint.h>
27 #include <stdbool.h>
28 #include <stddef.h>
29 /*****
```

```

*****
30  * Preprocessor Constants
31  *****
    *****/
32
33  /*****
    *****
34  * Configuration Constants
35  *****
    *****/
36
37  /*****
    *****
38  * Macros
39  *****
    *****/
40
41  /*****
    *****
42  * Typedefs
43  *****
    *****/
44
45  /*****
    *****
46  * Variables
47  *****
    *****/
48
49  /*****
    *****
50  * Function Prototypes
51  *****
    *****/
52  #ifdef __cplusplus
53  extern "C"{
54  #endif
55
62  void gsm_hal_reset( void );
63
72  bool gsm_tx_ctl( void );
73
82  void gsm_rx_ctl( bool state );

```

```
83
89 void gsm_hal_init( void );
90
99 void gsm_hal_write( char *buffer );
100
101 #ifdef __cplusplus
102 } // extern "C"
103 #endif
104
105 #endif /* GSM_HAL_H_ */
106 /*** End of File
    *****/
```

GSM Engine 1.0.0

Generic Engine for MikroElektronika's GSM Click Boards

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include Directory Reference

Directory dependency graph for include:

```
graph TD; include[include];
```

Files

file [at_config.h](#) [code]
GSM Engine and AT Parser Configuration.

file [at_parser.h](#) [code]
AT Parser.

file [at_timer.h](#) [code]
AT Timer.

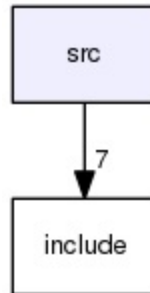
file [gsm_adapter.h](#) [code]
GSM Adapter.

file [gsm_engine.h](#) [code]
GSM Engine.

file [gsm_hal.h](#) [code]
GSM HAL layer.

src Directory Reference

Directory dependency graph for src:



Files

file **at_parser.c**
AT Parser.

file **at_timer.c**
AT Timer.

file **gsm_adapter.c**
GSM Adapter.

file **gsm_engine.c**
GSM Engine.

file **gsm_hal.c**
GSM HAL layer.