

My Project

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1 Class Index	1
1.1 Class List	1
2 File Index	3
2.1 File List	3
3 Class Documentation	5
3.1 AlarmManager Class Reference	5
3.1.1 Detailed Description	5
3.1.2 Member Function Documentation	5
3.1.2.1 alarm()	5
3.1.2.2 cantCallAPIAlarm()	6
3.1.2.3 initWithPackageOnDeliveryAlarm()	6
3.1.2.4 packageToCloseAlarm()	6
3.2 GoPlus2 Class Reference	7
3.2.1 Constructor & Destructor Documentation	7
3.2.1.1 GoPlus2()	7
3.2.2 Member Function Documentation	7
3.2.2.1 begin()	7
3.2.2.2 hub1_a_read_value()	8
3.2.2.3 hub1_d_o_read_value()	8
3.2.2.4 hub1_d_read_value()	8
3.2.2.5 hub1_set_io()	8
3.2.2.6 hub1_wire_value()	8
3.2.2.7 hub2_a_read_value()	8
3.2.2.8 hub2_d_o_read_value()	8
3.2.2.9 hub2_d_read_value()	9
3.2.2.10 hub2_set_io()	9
3.2.2.11 hub2_wire_value()	9
3.2.2.12 hub3_a_read_value()	9
3.2.2.13 hub3_d_o_read_value()	9
3.2.2.14 hub3_d_read_value()	9
3.2.2.15 hub3_set_io()	10
3.2.2.16 hub3_wire_value()	10
3.2.2.17 Motor_write_speed()	10
3.2.2.18 Servo_write_angle()	10
3.2.2.19 Servo_write_plusewidth()	10
3.3 GRBL Class Reference	10
3.3.1 Constructor & Destructor Documentation	11
3.3.1.1 GRBL()	11
3.3.2 Member Function Documentation	11
3.3.2.1 Init() [1/3]	12
3.3.2.2 Init() [2/3]	12

3.3.2.3 Init() [3/3]	12
3.3.2.4 inLock()	12
3.3.2.5 readClean()	12
3.3.2.6 readIdle()	12
3.3.2.7 readLine()	12
3.3.2.8 readStatus()	13
3.3.2.9 sendByte()	13
3.3.2.10 sendBytes()	13
3.3.2.11 sendGcode()	13
3.3.2.12 setMode()	13
3.3.2.13 setMotor()	13
3.3.2.14 unLock()	14
3.3.2.15 waitIdle()	14
3.3.3 Member Data Documentation	14
3.3.3.1 _addr	14
3.3.3.2 _Wire	14
3.3.3.3 addr	14
3.3.3.4 mode	14
3.4 M5UI Class Reference	14
3.4.1 Constructor & Destructor Documentation	15
3.4.1.1 M5UI()	15
3.4.2 Member Function Documentation	15
3.4.2.1 init()	15
3.4.2.2 initProgressBar()	15
3.4.2.3 notificationRFIDReadWithError()	16
3.4.2.4 notificationRFIDReadWithSuccess()	16
3.4.2.5 printTotalPackagesOnDelivery()	16
3.4.2.6 printWaitPackages()	16
3.4.2.7 runLight()	16
3.4.2.8 speakerBipWithLight()	17
3.5 Package Class Reference	17
3.5.1 Constructor & Destructor Documentation	18
3.5.1.1 Package()	18
3.5.2 Member Function Documentation	18
3.5.2.1 getDestination()	18
3.5.2.2 getMotorStep()	18
3.5.2.3 getUuid()	19
3.5.2.4 isDelivered()	19
3.5.2.5 toJson()	19
3.5.3 Member Data Documentation	19
3.5.3.1 INTERVAL_RFID_TO_DESTINATION	19
3.5.3.2 m_destination	20

3.5.3.3 m_motorStep	20
3.5.3.4 m_uuid	20
3.6 Queu Class Reference	20
3.6.1 Constructor & Destructor Documentation	22
3.6.1.1 Queu()	22
3.6.2 Member Function Documentation	22
3.6.2.1 append()	22
3.6.2.2 appendWithUuid()	22
3.6.2.3 checkIfFrontPackagelsDelivered()	23
3.6.2.4 clear()	23
3.6.2.5 exist()	23
3.6.2.6 getAll()	23
3.6.2.7 init()	24
3.6.2.8 initMotor()	24
3.6.2.9 initWifi()	24
3.6.2.10 lastEventUI()	24
3.6.2.11 motorForward()	24
3.6.2.12 pop_front()	25
3.6.2.13 size()	25
3.6.2.14 toJson()	25
3.6.2.15 updateServoMotor()	25
3.6.2.16 uuidExist()	25
3.6.3 Member Data Documentation	26
3.6.3.1 client	26
3.6.3.2 clientWifi	26
3.6.3.3 MIN_INTERVAL_BETWEEN_PACKAGE	26
3.6.3.4 motor	26
3.6.3.5 motorStepCounter	26
3.6.3.6 queu	27
3.6.3.7 servoMotor	27
3.6.3.8 SPEED_STEP_MOTOR	27
3.7 RfidDriver Class Reference	27
3.7.1 Constructor & Destructor Documentation	28
3.7.1.1 RfidDriver()	28
3.7.2 Member Function Documentation	28
3.7.2.1 getTagDetected()	28
3.7.2.2 init()	29
3.7.2.3 readRfid()	29
3.7.2.4 setTagDetected()	29
3.7.2.5 ShowReaderDetails()	29
3.7.2.6 vTaskRFIDInterrupt()	29
3.7.3 Member Data Documentation	30

3.7.3.1 variables	30
3.8 ServoMotor Class Reference	30
3.8.1 Constructor & Destructor Documentation	31
3.8.1.1 ServoMotor()	31
3.8.2 Member Function Documentation	31
3.8.2.1 turn()	31
3.8.2.2 turnLeft()	31
3.8.2.3 turnRight()	32
3.8.2.4 turnStraight()	32
3.8.3 Member Data Documentation	32
3.8.3.1 angleLeft	32
3.8.3.2 angleRight	32
3.8.3.3 angleStraight	32
3.8.3.4 goPlus	32
3.8.3.5 speed	33
3.9 RfidDriver::Variables Struct Reference	33
3.9.1 Member Data Documentation	33
3.9.1.1 mfrc522	33
3.9.1.2 tagDetected	33
3.10 WifiUtils Class Reference	33
3.10.1 Member Function Documentation	34
3.10.1.1 cleanOnDeliveryPackages()	34
3.10.1.2 connect()	34
3.10.1.3 getOnDeliveryPackage()	35
3.10.1.4 getPackageDestination()	35
3.10.1.5 isConnected()	35
3.10.1.6 postAlarm()	35
3.10.1.7 postDeliveredPackage()	36
3.10.1.8 postResetAlarm()	36
3.10.1.9 sendRequest()	36
3.10.2 Member Data Documentation	37
3.10.2.1 URL_ALARM	37
3.10.2.2 URL_DELIVERED	37
3.10.2.3 URL_DESTINATION	37
3.10.2.4 URL_ON_DELIVERY	37
3.10.2.5 URL_RESET_ALARM	37
4 File Documentation	39
4.1 esApp/lib/AlarmManager/AlarmManager.cpp File Reference	39
4.1.1 Detailed Description	39
4.2 esApp/lib/AlarmManager/AlarmManager.h File Reference	40
4.2.1 Detailed Description	41

4.2.2 Enumeration Type Documentation	41
4.2.2.1 Criticity	41
4.3 esApp/lib/GoPlus2/GoPlus2.cpp File Reference	42
4.4 esApp/lib/GoPlus2/GoPlus2.h File Reference	42
4.4.1 Macro Definition Documentation	44
4.4.1.1 GOPLUS_ADDR	44
4.4.1.2 HUB1_R_ADDR	44
4.4.1.3 HUB1_R_O_ADDR	44
4.4.1.4 HUB1_W_ADDR	44
4.4.1.5 HUB2_R_ADDR	44
4.4.1.6 HUB2_R_O_ADDR	44
4.4.1.7 HUB2_W_ADDR	45
4.4.1.8 HUB3_R_ADDR	45
4.4.1.9 HUB3_R_O_ADDR	45
4.4.1.10 HUB3_W_ADDR	45
4.4.1.11 HUB_IO_SET	45
4.4.1.12 HUB_READ_ANALOG	45
4.4.1.13 HUB_READ_DIGITAL	45
4.4.1.14 HUB_READ_O_DIGITAL	45
4.4.1.15 HUB_WIRE	46
4.4.1.16 MOTOR_ADDR	46
4.4.1.17 MOTOR_NUM0	46
4.4.1.18 MOTOR_NUM1	46
4.4.1.19 PLUSE_ADDR	46
4.4.1.20 SERVO_ADDR	46
4.4.1.21 SERVO_NUM0	46
4.4.1.22 SERVO_NUM0_PW	46
4.4.1.23 SERVO_NUM1	47
4.4.1.24 SERVO_NUM1_PW	47
4.4.1.25 SERVO_NUM2	47
4.4.1.26 SERVO_NUM2_PW	47
4.4.1.27 SERVO_NUM3	47
4.4.1.28 SERVO_NUM3_PW	47
4.5 esApp/lib/GRBL/MODULE_GRBL13.2.cpp File Reference	48
4.6 esApp/lib/GRBL/MODULE_GRBL13.2.h File Reference	48
4.7 esApp/lib/M5UI/M5UI.cpp File Reference	49
4.7.1 Detailed Description	50
4.8 esApp/lib/M5UI/M5UI.h File Reference	50
4.8.1 Detailed Description	51
4.8.2 Macro Definition Documentation	51
4.8.2.1 M5STACK_FIRE_NEO_DATA_PIN	51
4.8.2.2 M5STACK_FIRE_NEO_NUM_LEDS	51

4.9 esApp/lib/Package/Package.cpp File Reference	52
4.9.1 Detailed Description	52
4.10 esApp/lib/Package/Package.h File Reference	52
4.10.1 Detailed Description	53
4.11 esApp/lib/Queu/Queu.cpp File Reference	53
4.11.1 Detailed Description	54
4.12 esApp/lib/Queu/Queu.h File Reference	54
4.12.1 Detailed Description	55
4.12.2 Macro Definition Documentation	55
4.12.2.1 STEP_MOTOR_SCL	56
4.12.2.2 STEP_MOTOR_SDA	56
4.12.2.3 STEPMOTOR_I2C_ADDR	56
4.13 esApp/lib/RfidDriver/RfidDriver.cpp File Reference	56
4.14 esApp/lib/RfidDriver/RfidDriver.h File Reference	56
4.14.1 Macro Definition Documentation	57
4.14.1.1 RST_PIN	57
4.14.1.2 SS_PIN	58
4.15 esApp/lib/ServoMotor/ServoMotor.cpp File Reference	58
4.16 esApp/lib/ServoMotor/ServoMotor.h File Reference	58
4.17 esApp/lib/WifiUtils/WifiUtils.cpp File Reference	60
4.18 esApp/lib/WifiUtils/WifiUtils.h File Reference	60
4.18.1 Macro Definition Documentation	61
4.18.1.1 SERVER_ADDRESS	61
4.18.1.2 WIFI_PASSWORD	61
4.18.1.3 WIFI_SSID	62
4.19 esApp/src/main.cpp File Reference	62
4.19.1 Detailed Description	62
4.19.2 Function Documentation	63
4.19.2.1 loop()	63
4.19.2.2 packageListener()	63
4.19.2.3 setup()	63
4.19.3 Variable Documentation	63
4.19.3.1 MIN_DELAY_STEP_MOTOR	63
4.19.3.2 queu	63
4.19.3.3 rfid	63

Chapter 1

Class Index

1.1 Class List

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

AlarmManager	
Alarm manager class	5
GoPlus2	7
GRBL	10
M5UI	14
Package	17
Queu	20
RfidDriver	27
ServoMotor	30
RfidDriver::Variables	33
WifiUtils	33

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

esApp/lib/AlarmManager/ AlarmManager.cpp	
Alarm manager file	39
esApp/lib/AlarmManager/ AlarmManager.h	
Alarm manager file	40
esApp/lib/GoPlus2/ GoPlus2.cpp	42
esApp/lib/GoPlus2/ GoPlus2.h	42
esApp/lib/GRBL/ MODULE_GRBL13.2.cpp	48
esApp/lib/GRBL/ MODULE_GRBL13.2.h	48
esApp/lib/M5UI/ M5UI.cpp	
M5UI class implementation	49
esApp/lib/M5UI/ M5UI.h	
M5UI class declaration	50
esApp/lib/Package/ Package.cpp	52
esApp/lib/Package/ Package.h	
Package class	52
esApp/lib/Queue/ Queue.cpp	
Queue class implementation	53
esApp/lib/Queue/ Queue.h	
Queue class declaration	54
esApp/lib/RfidDriver/ RfidDriver.cpp	56
esApp/lib/RfidDriver/ RfidDriver.h	56
esApp/lib/ServoMotor/ ServoMotor.cpp	58
esApp/lib/ServoMotor/ ServoMotor.h	58
esApp/lib/WifiUtils/ WifiUtils.cpp	60
esApp/lib/WifiUtils/ WifiUtils.h	60
esApp/src/ main.cpp	
Main file of the project	62

Chapter 3

Class Documentation

3.1 AlarmManager Class Reference

Alarm manager class.

```
#include <AlarmManager.h>
```

Static Public Member Functions

- static void [packageToCloseAlarm](#) ()
Alert when a package is too close to the conveyor.
- static void [initWithPackageOnDeliveryAlarm](#) ()
Alert when a package is already on the conveyor.
- static void [cantCallAPIAlarm](#) ()
Alert when the API is not available.

Static Private Member Functions

- static void [alarm](#) ([Criticality](#) criticality, String error, String solution)
Alarm function.

3.1.1 Detailed Description

Alarm manager class.

3.1.2 Member Function Documentation

3.1.2.1 alarm()

```
void AlarmManager::alarm (  
    Criticality criticality,  
    String error,  
    String solution ) [static], [private]
```

Alarm function.

Parameters

<i>criticity</i>	Criticality of the alarm
<i>error</i>	Error message
<i>solution</i>	Solution message

Returns

void

3.1.2.2 cantCallAPIAlarm()

```
void AlarmManager::cantCallAPIAlarm ( ) [static]
```

Alert when the API is not available.

Returns

void

3.1.2.3 initWithPackageOnDeliveryAlarm()

```
void AlarmManager::initWithPackageOnDeliveryAlarm ( ) [static]
```

Alert when a package is already on the conveyor.

Returns

void

3.1.2.4 packageToCloseAlarm()

```
void AlarmManager::packageToCloseAlarm ( ) [static]
```

Alert when a package is too close to the conveyor.

Returns

void

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

- esApp/lib/AlarmManager/[AlarmManager.h](#)
- esApp/lib/AlarmManager/[AlarmManager.cpp](#)

3.2 GoPlus2 Class Reference

```
#include <GoPlus2.h>
```

Public Member Functions

- [GoPlus2](#) ()
- void [begin](#) ()
- void [Servo_write_angle](#) (uint8_t number, uint8_t angle)
- void [Servo_write_plusewidth](#) (uint8_t number, uint16_t width)
- void [Motor_write_speed](#) (uint8_t number, int motor_speed)
- uint16_t [hub1_a_read_value](#) (uint8_t reg)
- uint16_t [hub1_d_read_value](#) (uint8_t reg)
- uint16_t [hub2_d_read_value](#) (uint8_t reg)
- uint16_t [hub3_d_read_value](#) (uint8_t reg)
- uint16_t [hub2_a_read_value](#) (uint8_t reg)
- uint16_t [hub3_a_read_value](#) (uint8_t reg)
- void [hub1_wire_value](#) (uint8_t reg, uint8_t value)
- void [hub2_wire_value](#) (uint8_t reg, uint8_t value)
- void [hub3_wire_value](#) (uint8_t reg, uint8_t value)
- void [hub1_set_io](#) (uint8_t reg, uint8_t value)
- void [hub2_set_io](#) (uint8_t reg, uint8_t value)
- void [hub3_set_io](#) (uint8_t reg, uint8_t value)
- uint8_t [hub1_d_o_read_value](#) (uint8_t reg)
- uint8_t [hub2_d_o_read_value](#) (uint8_t reg)
- uint8_t [hub3_d_o_read_value](#) (uint8_t reg)

3.2.1 Constructor & Destructor Documentation

3.2.1.1 GoPlus2()

```
GoPlus2::GoPlus2 ( )
```

3.2.2 Member Function Documentation

3.2.2.1 begin()

```
void GoPlus2::begin ( )
```

3.2.2.2 hub1_a_read_value()

```
uint16_t GoPlus2::hub1_a_read_value (
    uint8_t reg )
```

3.2.2.3 hub1_d_o_read_value()

```
uint8_t GoPlus2::hub1_d_o_read_value (
    uint8_t reg )
```

3.2.2.4 hub1_d_read_value()

```
uint16_t GoPlus2::hub1_d_read_value (
    uint8_t reg )
```

3.2.2.5 hub1_set_io()

```
void GoPlus2::hub1_set_io (
    uint8_t reg,
    uint8_t value )
```

3.2.2.6 hub1_wire_value()

```
void GoPlus2::hub1_wire_value (
    uint8_t reg,
    uint8_t value )
```

3.2.2.7 hub2_a_read_value()

```
uint16_t GoPlus2::hub2_a_read_value (
    uint8_t reg )
```

3.2.2.8 hub2_d_o_read_value()

```
uint8_t GoPlus2::hub2_d_o_read_value (
    uint8_t reg )
```


3.2.2.9 hub2_d_read_value()

```
uint16_t GoPlus2::hub2_d_read_value (
    uint8_t reg )
```

3.2.2.10 hub2_set_io()

```
void GoPlus2::hub2_set_io (
    uint8_t reg,
    uint8_t value )
```

3.2.2.11 hub2_wire_value()

```
void GoPlus2::hub2_wire_value (
    uint8_t reg,
    uint8_t value )
```

3.2.2.12 hub3_a_read_value()

```
uint16_t GoPlus2::hub3_a_read_value (
    uint8_t reg )
```

3.2.2.13 hub3_d_o_read_value()

```
uint8_t GoPlus2::hub3_d_o_read_value (
    uint8_t reg )
```

3.2.2.14 hub3_d_read_value()

```
uint16_t GoPlus2::hub3_d_read_value (
    uint8_t reg )
```

3.2.2.15 hub3_set_io()

```
void GoPlus2::hub3_set_io (
    uint8_t reg,
    uint8_t value )
```

3.2.2.16 hub3_wire_value()

```
void GoPlus2::hub3_wire_value (
    uint8_t reg,
    uint8_t value )
```

3.2.2.17 Motor_write_speed()

```
void GoPlus2::Motor_write_speed (
    uint8_t number,
    int motor_speed )
```

3.2.2.18 Servo_write_angle()

```
void GoPlus2::Servo_write_angle (
    uint8_t number,
    uint8_t angle )
```

3.2.2.19 Servo_write_plusewidth()

```
void GoPlus2::Servo_write_plusewidth (
    uint8_t number,
    uint16_t width )
```

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

- esApp/lib/GoPlus2/[GoPlus2.h](#)
- esApp/lib/GoPlus2/[GoPlus2.cpp](#)

3.3 GRBL Class Reference

```
#include <MODULE_GRBL13.2.h>
```

Public Member Functions

- [GRBL](#) (uint8_t [addr](#)=0x70)
- void [Init](#) ()
- void [Init](#) (TwoWire *Wire)
- void [Init](#) (TwoWire *Wire, uint32_t x_step, uint32_t y_step, uint32_t z_step, uint32_t acc)
- void [sendGcode](#) (char *c)
- void [unLock](#) ()
- void [readClean](#) ()
- void [waitIdle](#) ()
- void [setMotor](#) (int x=0, int y=0, int z=0, int speed=300)
- void [setMode](#) (String [mode](#))
- String [readLine](#) ()
- String [readStatus](#) ()
- bool [readIdle](#) ()
- bool [inLock](#) ()

Public Attributes

- int [addr](#)
- String [mode](#)

Private Member Functions

- void [sendByte](#) (byte b)
- void [sendBytes](#) (uint8_t *data, size_t size)

Private Attributes

- TwoWire * [_Wire](#)
- uint8_t [_addr](#)

3.3.1 Constructor & Destructor Documentation

3.3.1.1 GRBL()

```
GRBL::GRBL (
    uint8_t addr = 0x70 )
```

3.3.2 Member Function Documentation

3.3.2.1 Init() [1/3]

```
void GRBL::Init ( )
```

3.3.2.2 Init() [2/3]

```
void GRBL::Init (
    TwoWire * Wire )
```

3.3.2.3 Init() [3/3]

```
void GRBL::Init (
    TwoWire * Wire,
    uint32_t x_step,
    uint32_t y_step,
    uint32_t z_step,
    uint32_t acc )
```

3.3.2.4 inLock()

```
bool GRBL::inLock ( )
```

3.3.2.5 readClean()

```
void GRBL::readClean ( )
```

3.3.2.6 readIdle()

```
bool GRBL::readIdle ( )
```

3.3.2.7 readLine()

```
String GRBL::readLine ( )
```

3.3.2.8 readStatus()

```
String GRBL::readStatus ( )
```

3.3.2.9 sendByte()

```
void GRBL::sendByte (
    byte b ) [private]
```

3.3.2.10 sendBytes()

```
void GRBL::sendBytes (
    uint8_t * data,
    size_t size ) [private]
```

3.3.2.11 sendGcode()

```
void GRBL::sendGcode (
    char * c )
```

3.3.2.12 setMode()

```
void GRBL::setMode (
    String mode )
```

3.3.2.13 setMotor()

```
void GRBL::setMotor (
    int x = 0,
    int y = 0,
    int z = 0,
    int speed = 300 )
```

3.3.2.14 unLock()

```
void GRBL::unLock ( )
```

3.3.2.15 waitIdle()

```
void GRBL::waitIdle ( )
```

3.3.3 Member Data Documentation

3.3.3.1 _addr

```
uint8_t GRBL::_addr [private]
```

3.3.3.2 _Wire

```
TwoWire* GRBL::_Wire [private]
```

3.3.3.3 addr

```
int GRBL::addr
```

3.3.3.4 mode

```
String GRBL::mode
```

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

- esApp/lib/GRBL/[MODULE_GRBL13.2.h](#)
- esApp/lib/GRBL/[MODULE_GRBL13.2.cpp](#)

3.4 M5UI Class Reference

```
#include <M5UI.h>
```

Public Member Functions

- [M5UI](#) ()
Construct a new [M5UI](#) object.
- void [init](#) ()
Init [M5UI](#).
- void [runLight](#) ()
Run light.
- void [notificationRFIDReadWithSuccess](#) ()
Notification RFID read with success.
- void [notificationRFIDReadWithError](#) ()
Notification RFID read with error.
- void [speakerBipWithLight](#) (int repeat, int during, uint32_t color)
Speaker bip with light.

Static Public Member Functions

- static void [initProgressBar](#) (int pourcent)
Print progress bar on M5Stack.
- static void [printWaitPackages](#) ()
Print wait packages.
- static void [printTotalPackagesOnDelivery](#) (int queueSize)
Print total packages on delivery.

3.4.1 Constructor & Destructor Documentation

3.4.1.1 M5UI()

```
M5UI::M5UI ( )
```

Construct a new [M5UI](#) object.

3.4.2 Member Function Documentation

3.4.2.1 init()

```
void M5UI::init ( )
```

Init [M5UI](#).

3.4.2.2 initProgressBar()

```
void M5UI::initProgressBar (
    int pourcent ) [static]
```

Print progress bar on M5Stack.

Parameters

<i>pourcent</i>	Pourcent of progress
-----------------	----------------------

3.4.2.3 notificationRFIDReadWithError()

```
void M5UI::notificationRFIDReadWithError ( )
```

Notification RFID read with error.

3.4.2.4 notificationRFIDReadWithSuccess()

```
void M5UI::notificationRFIDReadWithSuccess ( )
```

Notification RFID read with success.

3.4.2.5 printTotalPackagesOnDelivery()

```
void M5UI::printTotalPackagesOnDelivery (
    int queueSize ) [static]
```

Print total packages on delivery.

Parameters

<i>queueSize</i>	Size of the queue
------------------	-------------------

3.4.2.6 printWaitPackages()

```
void M5UI::printWaitPackages ( ) [static]
```

Print wait packages.

3.4.2.7 runLight()

```
void M5UI::runLight ( )
```

Run light.

3.4.2.8 speakerBipWithLight()

```
void M5UI::speakerBipWithLight (
    int repeat,
    int during,
    uint32_t color )
```

Speaker bip with light.

Parameters

<i>repeat</i>	Number of bip is repeat
<i>during</i>	During of bip
<i>color</i>	Color of light

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

- [esApp/lib/M5UI/M5UI.h](#)
- [esApp/lib/M5UI/M5UI.cpp](#)

3.5 Package Class Reference

```
#include <Package.h>
```

Public Member Functions

- [Package](#) (String uuid, String destination, uint32_t motorStepCounter)
Construct a new [Package](#) object.
- bool [isDelivered](#) (uint32_t motorStepCounter)
Check if the package is delivered.
- String [getUuid](#) ()
Get the Uuid object.
- String [getDestination](#) ()
Get the Destination object.
- uint32_t [getMotorStep](#) ()
Get the Motor Step object.
- String [toJson](#) ()
Get the Json object.

Private Attributes

- String [m_destination](#)
- String [m_uuid](#)
- uint32_t [m_motorStep](#)

Static Private Attributes

- static const int [INTERVAL_RFID_TO_DESTINATION](#) = 21

3.5.1 Constructor & Destructor Documentation

3.5.1.1 Package()

```
Package::Package (
    String uuid,
    String destination,
    uint32_t motorStepCounter )
```

Construct a new [Package](#) object.

Parameters

<i>uuid</i>	UUID of the package
<i>destination</i>	Destination of the package
<i>motorStepCounter</i>	Motor step counter

Returns

[Package](#)

3.5.2 Member Function Documentation

3.5.2.1 getDestination()

```
String Package::getDestination ( )
```

Get the Destination object.

Returns

String Destination of the package

3.5.2.2 getMotorStep()

```
uint32_t Package::getMotorStep ( )
```

Get the Motor Step object.

Returns

uint32_t Motor step counter

3.5.2.3 `getUuid()`

```
String Package::getUuid ( )
```

Get the Uuid object.

Returns

String UUID of the package

3.5.2.4 `isDelivered()`

```
bool Package::isDelivered (
    uint32_t motorStepCounter )
```

Check if the package is delivered.

Parameters

<i>motorStepCounter</i>	Motor step counter
-------------------------	--------------------

Returns

true [Package](#) is delivered

false [Package](#) is not delivered

3.5.2.5 `toJson()`

```
String Package::toJson ( )
```

Get the Json object.

Returns

String Json of the package

3.5.3 Member Data Documentation

3.5.3.1 `INTERVAL_RFID_TO_DESTINATION`

```
const int Package::INTERVAL_RFID_TO_DESTINATION = 21 [static], [private]
```

3.5.3.2 m_destination

```
String Package::m_destination [private]
```

3.5.3.3 m_motorStep

```
uint32_t Package::m_motorStep [private]
```

3.5.3.4 m_uuid

```
String Package::m_uuid [private]
```

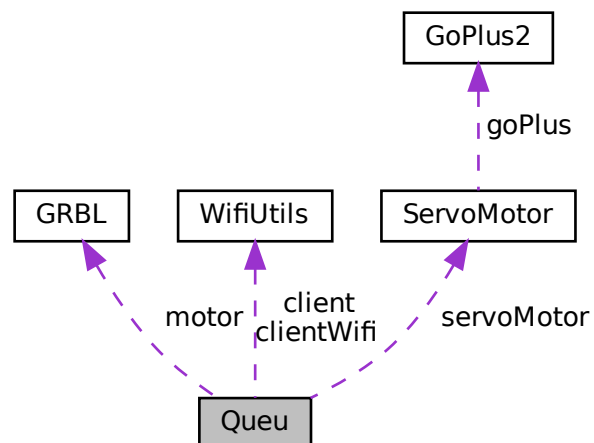
The documentation for this class was generated from the following files:

- esApp/lib/Package/[Package.h](#)
- esApp/lib/Package/[Package.cpp](#)

3.6 Queu Class Reference

```
#include <Queu.h>
```

Collaboration diagram for Queu:



Public Member Functions

- [Queu](#) ()
Construct a new [Queu](#) object.
- void [motorForward](#) ()
Move to forward the motor.
- void [initMotor](#) ()
Init the motor.
- void [init](#) ()
Init the queue.
- void [initWifi](#) ()
Init the wifi.
- void [checkIfFrontPackagelsDelivered](#) ()
Check if the front package is delivered.
- void [clear](#) ()
clear queue
- void [lastEventUI](#) (bool isAdded, String uuid)
print last event on m5stack screen
- void [updateServoMotor](#) ()
Update servomoto destination according to front queue value.
- String [uuidExist](#) (String uuid)
get destination of specific package by uuid
- std::list< [Package](#) > [getAll](#) ()
Get the All destination.
- String [toJson](#) ()
string to json
- void [appendWithUuid](#) (String uuid)
append package to queue
- void [pop_front](#) ()
pop the Front package
- int [size](#) ()
Get the Size queue.

Public Attributes

- [GRBL motor](#) = [GRBL](#)([STEPMOTOR_I2C_ADDR](#))

Private Member Functions

- bool [append](#) ([Package](#) package)
Append package to queue.
- bool [exist](#) ([Package](#) package)
Check if the package is delivered.

Private Attributes

- const int [SPEED_STEP_MOTOR](#) = 100
- const int [MIN_INTERVAL_BETWEEN_PACKAGE](#) = 5
- uint32_t [motorStepCounter](#) = 0
- [ServoMotor](#) [servoMotor](#)
- [WifiUtils](#) [clientWifi](#) = [WifiUtils](#)()
- [WifiUtils](#) [client](#) = [WifiUtils](#)()
- std::list< [Package](#) > [queu](#)

3.6.1 Constructor & Destructor Documentation

3.6.1.1 `Queu()`

```
Queu::Queu ( )
```

Construct a new [Queu](#) object.

Returns

[Queu](#)

3.6.2 Member Function Documentation

3.6.2.1 `append()`

```
bool Queu::append (
    Package package ) [private]
```

Append package to queue.

Parameters

<i>package</i>	Package to append
----------------	-----------------------------------

Returns

true [Package](#) is queued

3.6.2.2 `appendWithUuid()`

```
void Queu::appendWithUuid (
    String uuid )
```

append package to queue

Parameters

<i>uuid</i>	
-------------	--

3.6.2.3 checkIfFrontPackageIsDelivered()

```
void Queu::checkIfFrontPackageIsDelivered ( )
```

Check if the front package is delivered.

3.6.2.4 clear()

```
void Queu::clear ( )
```

clear queue

3.6.2.5 exist()

```
bool Queu::exist (
    Package package ) [private]
```

Check if the package is delivered.

Parameters

<i>package</i>	Package to check
----------------	------------------

Returns

true Package is delivered

3.6.2.6 getAll()

```
std::list< Package > Queu::getAll ( )
```

Get the All destination.

Returns

std::list<Package>

3.6.2.7 init()

```
void Queu::init ( )
```

Init the queue.

init queue

3.6.2.8 initMotor()

```
void Queu::initMotor ( )
```

Init the motor.

3.6.2.9 initWifi()

```
void Queu::initWifi ( )
```

Init the wifi.

init wifi

3.6.2.10 lastEventUI()

```
void Queu::lastEventUI (
    bool isAdded,
    String uuid )
```

print last event on m5stack screen

Parameters

<i>isAdded</i>	
<i>uuid</i>	

3.6.2.11 motorForward()

```
void Queu::motorForward ( )
```

Move to forward the motor.

3.6.2.12 pop_front()

```
void Queu::pop_front ( )
```

pop the Front package

Returns

Package

3.6.2.13 size()

```
int Queu::size ( )
```

Get the Size queue.

Returns

int

3.6.2.14 toJson()

```
String Queu::toJson ( )
```

string to json

Returns

String

3.6.2.15 updateServoMotor()

```
void Queu::updateServoMotor ( )
```

Update servomotoro destination according to front queue value.

3.6.2.16 uuidExist()

```
String Queu::uuidExist (
    String uuid )
```

get destination of specific package by uuid

Parameters

<i>uuid</i>	
-------------	--

Returns

String

3.6.3 Member Data Documentation

3.6.3.1 client

```
WifiUtils Queu::client = WifiUtils() [private]
```

3.6.3.2 clientWifi

```
WifiUtils Queu::clientWifi = WifiUtils() [private]
```

3.6.3.3 MIN_INTERVAL_BETWEEN_PACKAGE

```
const int Queu::MIN_INTERVAL_BETWEEN_PACKAGE = 5 [private]
```

3.6.3.4 motor

```
GRBL Queu::motor = GRBL(STEPMOTOR_I2C_ADDR)
```

3.6.3.5 motorStepCounter

```
uint32_t Queu::motorStepCounter = 0 [private]
```

3.6.3.6 `queu`

```
std::list<Package> Queu::queu [private]
```

3.6.3.7 `servoMotor`

```
ServoMotor Queu::servoMotor [private]
```

3.6.3.8 `SPEED_STEP_MOTOR`

```
const int Queu::SPEED_STEP_MOTOR = 100 [private]
```

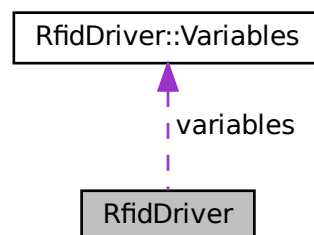
The documentation for this class was generated from the following files:

- `esApp/lib/Queu/Queu.h`
- `esApp/lib/Queu/Queu.cpp`

3.7 RfidDriver Class Reference

```
#include <RfidDriver.h>
```

Collaboration diagram for RfidDriver:



Classes

- struct [Variables](#)

Public Member Functions

- [RfidDriver](#) ()
- void [init](#) ()
Init RFID driver.
- String [readRfid](#) ()
Read RFID tag.
- void [setTagDetected](#) (bool b)
Set tag detected.
- bool [getTagDetected](#) ()
Get tag detected.

Private Member Functions

- void [ShowReaderDetails](#) ()
print reader version

Static Private Member Functions

- static void [vTaskRFIDInterrupt](#) (void *pvParameters)
Task for simulating interrupt RFID detection.

Private Attributes

- struct [RfidDriver::Variables](#) variables

3.7.1 Constructor & Destructor Documentation

3.7.1.1 RfidDriver()

```
RfidDriver::RfidDriver ( )
```

3.7.2 Member Function Documentation

3.7.2.1 getTagDetected()

```
bool RfidDriver::getTagDetected ( )
```

Get tag detected.

Returns

true Tag detected

false Tag not detected

3.7.2.2 init()

```
void RfidDriver::init ( )
```

Init RFID driver.

3.7.2.3 readRfid()

```
String RfidDriver::readRfid ( )
```

Read RFID tag.

Returns

String RFID tag

3.7.2.4 setTagDetected()

```
void RfidDriver::setTagDetected (
    bool b )
```

Set tag detected.

Parameters

<i>b</i>	Tag detected
----------	--------------

3.7.2.5 ShowReaderDetails()

```
void RfidDriver::ShowReaderDetails ( ) [private]
```

print reader version

3.7.2.6 vTaskRFIDInterrupt()

```
void RfidDriver::vTaskRFIDInterrupt (
    void * pvParameters ) [static], [private]
```

Task for simulating interrupt RFID detection.

Parameters

<i>pvParameters</i>	
---------------------	--

3.7.3 Member Data Documentation

3.7.3.1 variables

```
struct RfidDriver::Variables RfidDriver::variables [private]
```

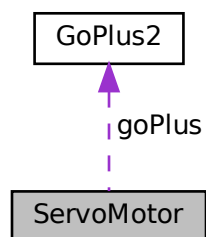
The documentation for this class was generated from the following files:

- esApp/lib/RfidDriver/[RfidDriver.h](#)
- esApp/lib/RfidDriver/[RfidDriver.cpp](#)

3.8 ServoMotor Class Reference

```
#include <ServoMotor.h>
```

Collaboration diagram for ServoMotor:



Public Member Functions

- [ServoMotor](#) ()
- void [turnLeft](#) ()
servo motor turns left
- void [turnRight](#) ()
servo motor turns right
- void [turnStraight](#) ()
servo motor turns straight

Private Member Functions

- void `turn` (uint16_t angle)
servo motor turns to a specific angle

Private Attributes

- `GoPlus2` `goPlus`
- const uint16_t `angleLeft` = 60
- const uint16_t `angleStraight` = 40
- const uint16_t `angleRight` = 25
- int `speed`

3.8.1 Constructor & Destructor Documentation

3.8.1.1 ServoMotor()

```
ServoMotor::ServoMotor ( )
```

3.8.2 Member Function Documentation

3.8.2.1 turn()

```
void ServoMotor::turn (
    uint16_t angle ) [private]
```

servo motor turns to a specific angle

Parameters

<i>angle</i>	
--------------	--

3.8.2.2 turnLeft()

```
void ServoMotor::turnLeft ( )
```

servo motor turns left

3.8.2.3 turnRight()

```
void ServoMotor::turnRight ( )
```

servo motor turns right

3.8.2.4 turnStraight()

```
void ServoMotor::turnStraight ( )
```

servo motor turns straight

3.8.3 Member Data Documentation

3.8.3.1 angleLeft

```
const uint16_t ServoMotor::angleLeft = 60 [private]
```

3.8.3.2 angleRight

```
const uint16_t ServoMotor::angleRight = 25 [private]
```

3.8.3.3 angleStraight

```
const uint16_t ServoMotor::angleStraight = 40 [private]
```

3.8.3.4 goPlus

```
GoPlus2 ServoMotor::goPlus [private]
```


3.8.3.5 speed

```
int ServoMotor::speed [private]
```

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

- esApp/lib/ServoMotor/[ServoMotor.h](#)
- esApp/lib/ServoMotor/[ServoMotor.cpp](#)

3.9 RfidDriver::Variables Struct Reference

Public Attributes

- MFRC522_I2C [mfrc522](#) = MFRC522_I2C([SS_PIN](#), [RST_PIN](#))
- bool [tagDetected](#) = false

3.9.1 Member Data Documentation

3.9.1.1 mfrc522

```
MFRC522_I2C RfidDriver::Variables::mfrc522 = MFRC522_I2C(SS\_PIN, RST\_PIN)
```

3.9.1.2 tagDetected

```
bool RfidDriver::Variables::tagDetected = false
```

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

- esApp/lib/RfidDriver/[RfidDriver.h](#)

3.10 WifiUtils Class Reference

```
#include <WifiUtils.h>
```

Public Member Functions

- bool [connect](#) (const char *ssid, const char *password)
connect ESP to wifi
- int [getOnDeliveryPackage](#) ()
call API, get the number of the package on delivery
- String [cleanOnDeliveryPackages](#) ()
in case of brutal shutdown, call API to get list of packages in convoyor
- String [getPackageDestination](#) (String uuid)
Call API, get the destination of the package.
- String [postDeliveredPackage](#) (String uuid)
call API, push the delivered package
- String [postAlarm](#) (String message)
call API because alarm is on
- String [postResetAlarm](#) ()
call API because alarm shutdown
- bool [isConnected](#) ()
returns bool if API is connected or not

Public Attributes

- const String [URL_DESTINATION](#) = String([SERVER_ADDRESS](#)) + "destination?uuid="
- const String [URL_ON_DELIVERY](#) = String([SERVER_ADDRESS](#)) + "onDelivery"
- const String [URL_DELIVERED](#) = String([SERVER_ADDRESS](#)) + "delivered"
- const String [URL_ALARM](#) = String([SERVER_ADDRESS](#)) + "alarm"
- const String [URL_RESET_ALARM](#) = String([SERVER_ADDRESS](#)) + "resetAlarm"

Private Member Functions

- String [sendRequest](#) (String method, String url, String body)
send http request to api

3.10.1 Member Function Documentation

3.10.1.1 [cleanOnDeliveryPackages\(\)](#)

```
String WifiUtils::cleanOnDeliveryPackages ( )
```

in case of brutal shutdown, call API to get list of packages in convoyor

Returns

String list of packages

3.10.1.2 [connect\(\)](#)

```
bool WifiUtils::connect (
    const char * ssid,
    const char * password )
```

connect ESP to wifi

Parameters

<i>ssid</i>	wifi id
<i>password</i>	password wifi

3.10.1.3 getOnDeliveryPackage()

```
int WifiUtils::getOnDeliveryPackage ( )
```

call API, get the number of the package on delivery

3.10.1.4 getPackageDestination()

```
String WifiUtils::getPackageDestination (
    String uuid )
```

Call API, get the destination of the package.

Parameters

<i>uuid</i>	
-------------	--

Returns

String destination

3.10.1.5 isConnected()

```
bool WifiUtils::isConnected ( )
```

returns bool if API is connected or not

Returns

true API is connected

false API is not connected

3.10.1.6 postAlarm()

```
String WifiUtils::postAlarm (
    String message )
```

call API because alarm is on

Parameters

<i>message</i>	error message
----------------	---------------

Returns

String

3.10.1.7 postDeliveredPackage()

```
String WifiUtils::postDeliveredPackage (
    String uuid )
```

call API, push the delivered package

Parameters

<i>uuid</i>	package id
-------------	------------

Returns

String

3.10.1.8 postResetAlarm()

```
String WifiUtils::postResetAlarm ( )
```

call API because alarm shutdown

Returns

String

3.10.1.9 sendRequest()

```
String WifiUtils::sendRequest (
    String method,
    String url,
    String body ) [private]
```

send http request to api

Parameters

<i>method</i>	
<i>url</i>	
<i>body</i>	

Returns

String response from server

3.10.2 Member Data Documentation

3.10.2.1 URL_ALARM

```
const String WifiUtils::URL_ALARM = String(SERVER_ADDRESS) + "alarm"
```

3.10.2.2 URL_DELIVERED

```
const String WifiUtils::URL_DELIVERED = String(SERVER_ADDRESS) + "delivered"
```

3.10.2.3 URL_DESTINATION

```
const String WifiUtils::URL_DESTINATION = String(SERVER_ADDRESS) + "destination?uuid="
```

3.10.2.4 URL_ON_DELIVERY

```
const String WifiUtils::URL_ON_DELIVERY = String(SERVER_ADDRESS) + "onDelivery"
```

3.10.2.5 URL_RESET_ALARM

```
const String WifiUtils::URL_RESET_ALARM = String(SERVER_ADDRESS) + "resetAlarm"
```

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

- esApp/lib/WifiUtils/[WifiUtils.h](#)
- esApp/lib/WifiUtils/[WifiUtils.cpp](#)

Chapter 4

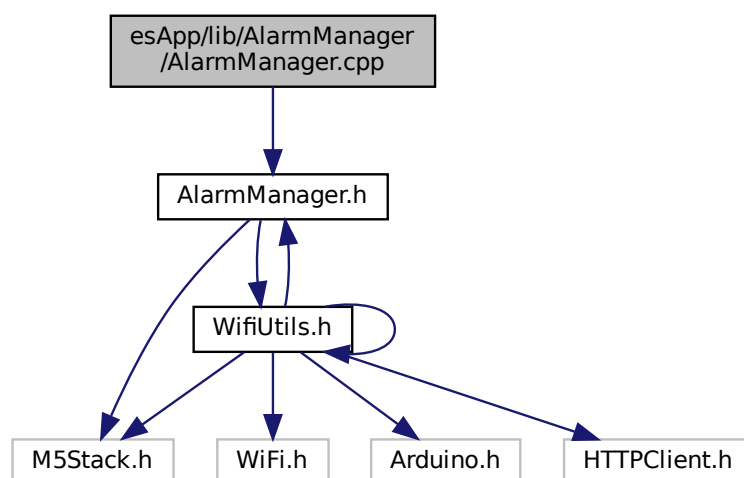
File Documentation

4.1 esApp/lib/AlarmManager/AlarmManager.cpp File Reference

Alarm manager file.

```
#include "AlarmManager.h"
```

Include dependency graph for AlarmManager.cpp:



4.1.1 Detailed Description

Alarm manager file.

Author

Thomas DESCHOMBECK

Date

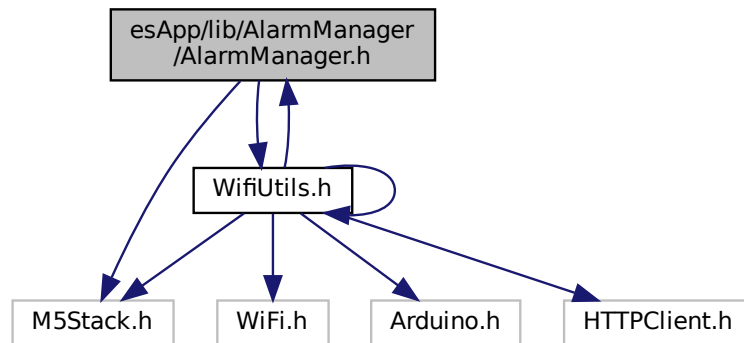
2023-02-03

4.2 esApp/lib/AlarmManager/AlarmManager.h File Reference

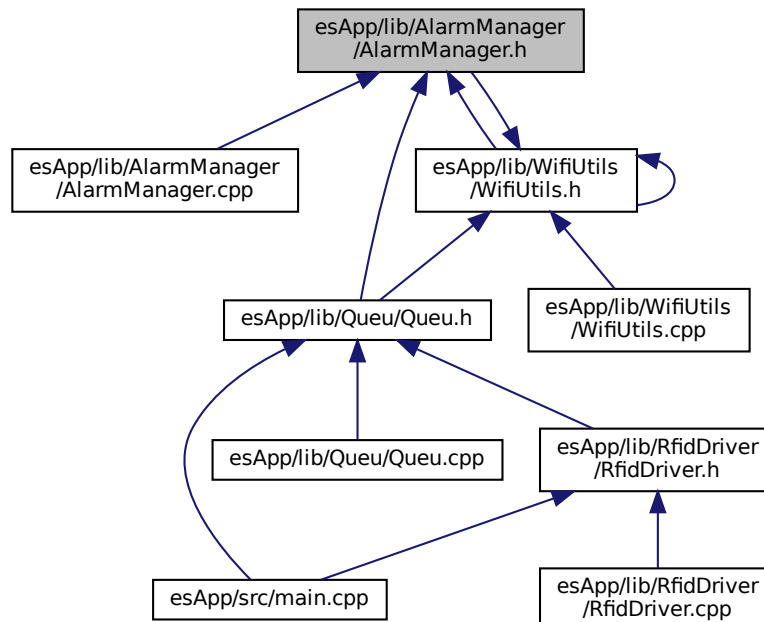
Alarm manager file.

```
#include <M5Stack.h>
#include <WifiUtils.h>
```

Include dependency graph for AlarmManager.h:



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



Classes

- class [AlarmManager](#)
Alarm manager class.

Enumerations

- enum [Criticality](#) { [Critical](#) , [Warning](#) , [Information](#) }

4.2.1 Detailed Description

Alarm manager file.

Author

Thomas DESCHOMBECK

Date

2023-02-03

4.2.2 Enumeration Type Documentation

4.2.2.1 Criticality

enum [Criticality](#)

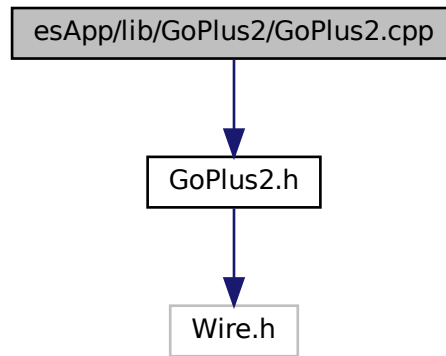
Enumerator

Critical	
Warning	
Information	

4.3 esApp/lib/GoPlus2/GoPlus2.cpp File Reference

```
#include "GoPlus2.h"
```

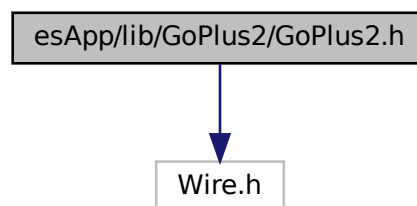
Include dependency graph for GoPlus2.cpp:



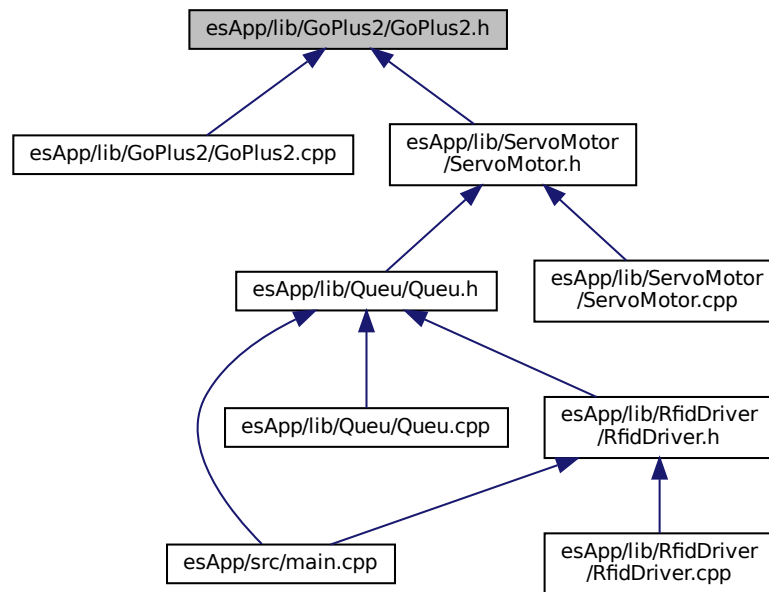
4.4 esApp/lib/GoPlus2/GoPlus2.h File Reference

```
#include <Wire.h>
```

Include dependency graph for GoPlus2.h:



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



Classes

- class [GoPlus2](#)

Macros

- #define [GOPLUS_ADDR](#) 0x38
- #define [SERVO_ADDR](#) 0x00
- #define [PLUSE_ADDR](#) 0x10
- #define [SERVO_NUM0](#) 0x00
- #define [SERVO_NUM1](#) 0x01
- #define [SERVO_NUM2](#) 0x02
- #define [SERVO_NUM3](#) 0x03
- #define [SERVO_NUM0_PW](#) 0x00
- #define [SERVO_NUM1_PW](#) 0x02
- #define [SERVO_NUM2_PW](#) 0x04
- #define [SERVO_NUM3_PW](#) 0x06
- #define [MOTOR_ADDR](#) 0x30
- #define [MOTOR_NUM0](#) 0x00
- #define [MOTOR_NUM1](#) 0x01
- #define [HUB1_R_ADDR](#) 0x00
- #define [HUB2_R_ADDR](#) 0x02
- #define [HUB3_R_ADDR](#) 0x04
- #define [HUB1_W_ADDR](#) 0x00
- #define [HUB2_W_ADDR](#) 0x01
- #define [HUB3_W_ADDR](#) 0x02
- #define [HUB_READ_ANALOG](#) 0x40

- `#define HUB_READ_DIGITAL 0x50`
- `#define HUB_WIRE 0x60`
- `#define HUB_READ_O_DIGITAL 0x70`
- `#define HUB1_R_O_ADDR 0x00`
- `#define HUB2_R_O_ADDR 0x01`
- `#define HUB3_R_O_ADDR 0x02`
- `#define HUB_IO_SET 0x80`

4.4.1 Macro Definition Documentation

4.4.1.1 GOPLUS_ADDR

```
#define GOPLUS_ADDR 0x38
```

4.4.1.2 HUB1_R_ADDR

```
#define HUB1_R_ADDR 0x00
```

4.4.1.3 HUB1_R_O_ADDR

```
#define HUB1_R_O_ADDR 0x00
```

4.4.1.4 HUB1_W_ADDR

```
#define HUB1_W_ADDR 0x00
```

4.4.1.5 HUB2_R_ADDR

```
#define HUB2_R_ADDR 0x02
```

4.4.1.6 HUB2_R_O_ADDR

```
#define HUB2_R_O_ADDR 0x01
```

4.4.1.7 HUB2_W_ADDR

```
#define HUB2_W_ADDR 0x01
```

4.4.1.8 HUB3_R_ADDR

```
#define HUB3_R_ADDR 0x04
```

4.4.1.9 HUB3_R_O_ADDR

```
#define HUB3_R_O_ADDR 0x02
```

4.4.1.10 HUB3_W_ADDR

```
#define HUB3_W_ADDR 0x02
```

4.4.1.11 HUB_IO_SET

```
#define HUB_IO_SET 0x80
```

4.4.1.12 HUB_READ_ANALOG

```
#define HUB_READ_ANALOG 0x40
```

4.4.1.13 HUB_READ_DIGITAL

```
#define HUB_READ_DIGITAL 0x50
```

4.4.1.14 HUB_READ_O_DIGITAL

```
#define HUB_READ_O_DIGITAL 0x70
```

4.4.1.15 HUB_WIRE

```
#define HUB_WIRE 0x60
```

4.4.1.16 MOTOR_ADDR

```
#define MOTOR_ADDR 0x30
```

4.4.1.17 MOTOR_NUM0

```
#define MOTOR_NUM0 0x00
```

4.4.1.18 MOTOR_NUM1

```
#define MOTOR_NUM1 0x01
```

4.4.1.19 PLUSE_ADDR

```
#define PLUSE_ADDR 0x10
```

4.4.1.20 SERVO_ADDR

```
#define SERVO_ADDR 0x00
```

4.4.1.21 SERVO_NUM0

```
#define SERVO_NUM0 0x00
```

4.4.1.22 SERVO_NUM0_PW

```
#define SERVO_NUM0_PW 0x00
```

4.4.1.23 SERVO_NUM1

```
#define SERVO_NUM1 0x01
```

4.4.1.24 SERVO_NUM1_PW

```
#define SERVO_NUM1_PW 0x02
```

4.4.1.25 SERVO_NUM2

```
#define SERVO_NUM2 0x02
```

4.4.1.26 SERVO_NUM2_PW

```
#define SERVO_NUM2_PW 0x04
```

4.4.1.27 SERVO_NUM3

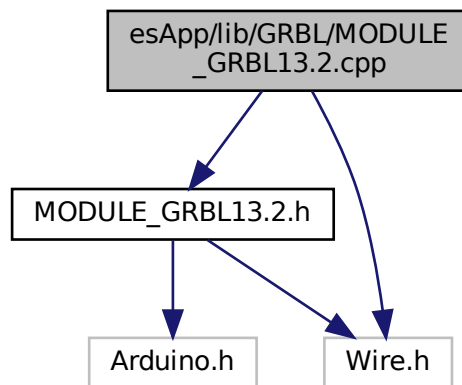
```
#define SERVO_NUM3 0x03
```

4.4.1.28 SERVO_NUM3_PW

```
#define SERVO_NUM3_PW 0x06
```

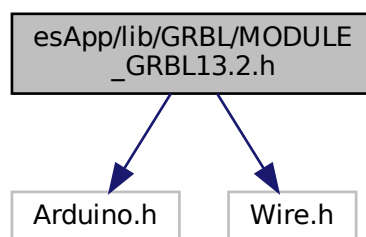
4.5 esApp/lib/GRBL/MODULE_GRBL13.2.cpp File Reference

```
#include "MODULE_GRBL13.2.h"  
#include <Wire.h>  
Include dependency graph for MODULE_GRBL13.2.cpp:
```

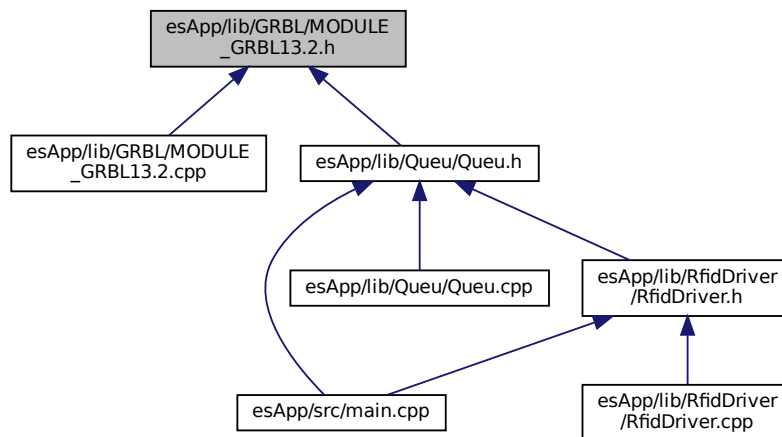


4.6 esApp/lib/GRBL/MODULE_GRBL13.2.h File Reference

```
#include <Arduino.h>  
#include <Wire.h>  
Include dependency graph for MODULE_GRBL13.2.h:
```



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



Classes

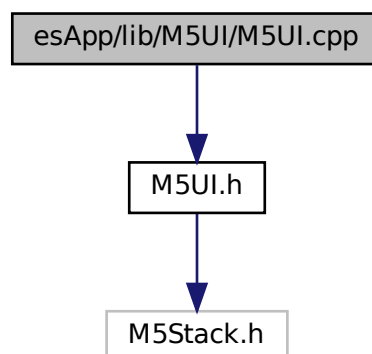
- class [GRBL](#)

4.7 esApp/lib/M5UI/M5UI.cpp File Reference

[M5UI](#) class implementation.

```
#include "M5UI.h"
```

Include dependency graph for M5UI.cpp:



4.7.1 Detailed Description

[M5UI](#) class implementation.

Author

Thomas DESCHOMBECK

Date

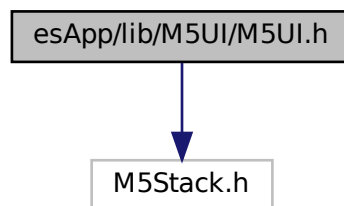
2023-02-03

4.8 esApp/lib/M5UI/M5UI.h File Reference

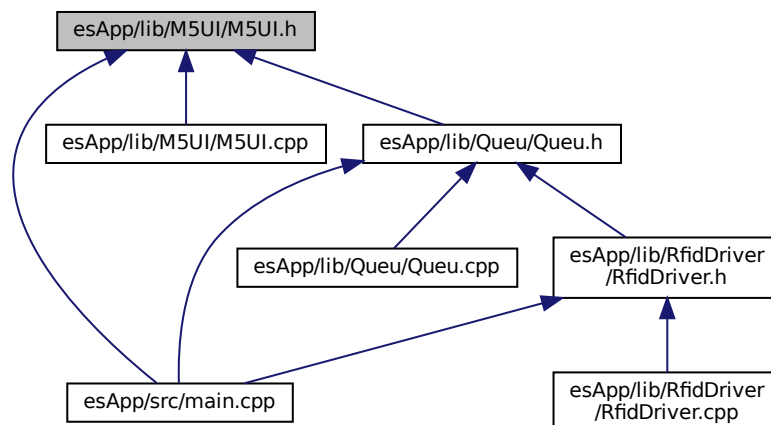
[M5UI](#) class declaration.

```
#include <M5Stack.h>
```

Include dependency graph for M5UI.h:



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



Classes

- class [M5UI](#)

Macros

- `#define M5STACK_FIRE_NEO_NUM_LEDS 10`
- `#define M5STACK_FIRE_NEO_DATA_PIN 15`

4.8.1 Detailed Description

[M5UI](#) class declaration.

Author

Thomas DESCHOMBECK

Date

2023-02-03

4.8.2 Macro Definition Documentation

4.8.2.1 M5STACK_FIRE_NEO_DATA_PIN

```
#define M5STACK_FIRE_NEO_DATA_PIN 15
```

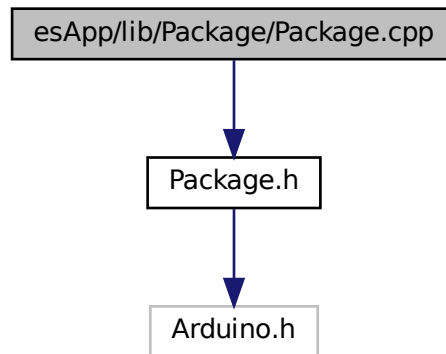
4.8.2.2 M5STACK_FIRE_NEO_NUM_LEDS

```
#define M5STACK_FIRE_NEO_NUM_LEDS 10
```

4.9 esApp/lib/Package/Package.cpp File Reference

```
#include "Package.h"
```

Include dependency graph for Package.cpp:



4.9.1 Detailed Description

Author

Thomas DESCHOMBECK

Date

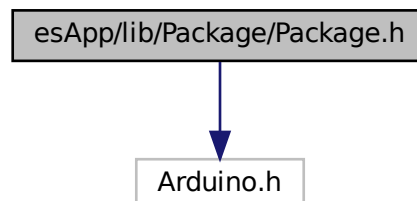
2023-02-03

4.10 esApp/lib/Package/Package.h File Reference

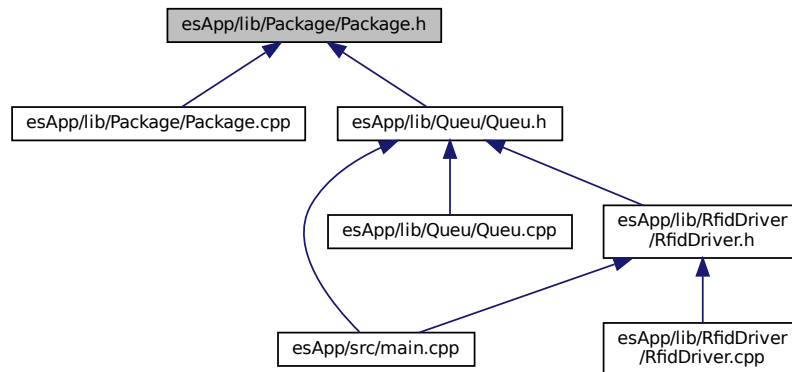
[Package](#) class.

```
#include <Arduino.h>
```

Include dependency graph for Package.h:



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



Classes

- class [Package](#)

4.10.1 Detailed Description

[Package](#) class.

Author

Thomas DESCHOMBECK

Date

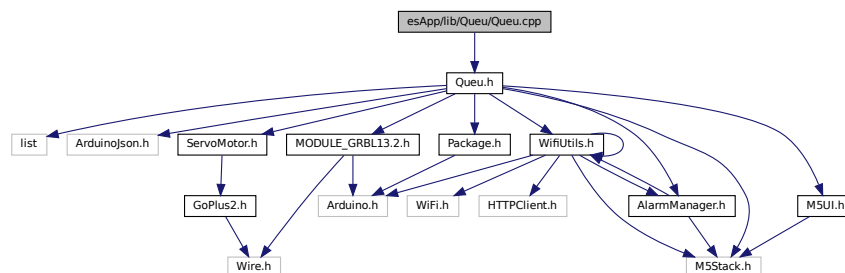
2023-02-03

4.11 esApp/lib/Queu/Queu.cpp File Reference

[Queu](#) class implementation.

```
#include "Queu.h"
```

Include dependency graph for Queu.cpp:



4.11.1 Detailed Description

[Queu](#) class implementation.

Author

Thomas DESCHOMBECK

Date

2023-02-03

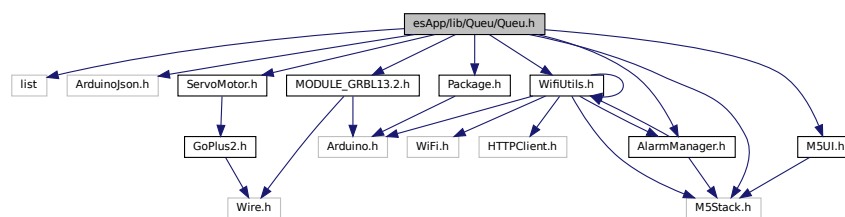
Version

1.0

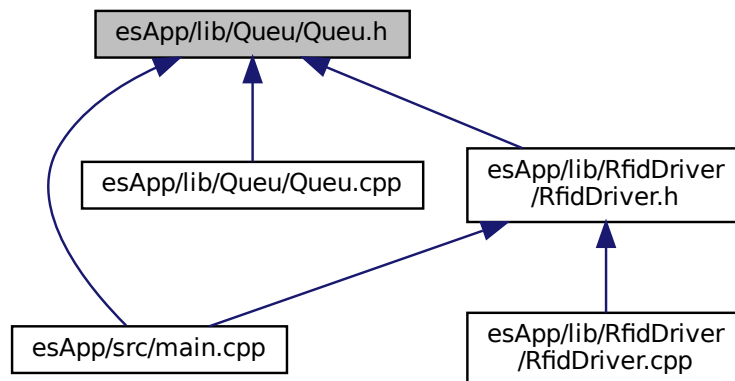
4.12 esApp/lib/Queu/Queu.h File Reference

[Queu](#) class declaration.

```
#include <list>
#include <ArduinoJson.h>
#include <WifiUtils.h>
#include <Package.h>
#include <ServoMotor.h>
#include <M5Stack.h>
#include <AlarmManager.h>
#include <M5UI.h>
#include "MODULE_GRBL13.2.h"
Include dependency graph for Queu.h:
```



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



Classes

- class [Queu](#)

Macros

- #define [STEPMOTOR_I2C_ADDR](#) 0x70
- #define [STEP_MOTOR_SDA](#) 21
- #define [STEP_MOTOR_SCL](#) 22

4.12.1 Detailed Description

[Queu](#) class declaration.

Author

Thomas DESCHOMBECK

Date

2023-02-03

4.12.2 Macro Definition Documentation

4.12.2.1 STEP_MOTOR_SCL

```
#define STEP_MOTOR_SCL 22
```

4.12.2.2 STEP_MOTOR_SDA

```
#define STEP_MOTOR_SDA 21
```

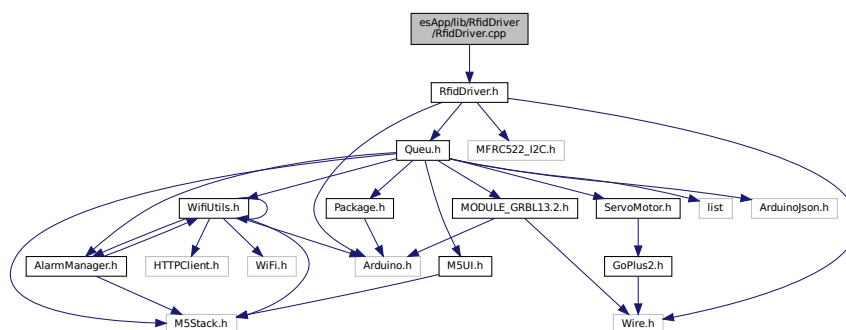
4.12.2.3 STEPMOTOR_I2C_ADDR

```
#define STEPMOTOR_I2C_ADDR 0x70
```

4.13 esApp/lib/RfidDriver/RfidDriver.cpp File Reference

```
#include "RfidDriver.h"
```

Include dependency graph for RfidDriver.cpp:



4.14 esApp/lib/RfidDriver/RfidDriver.h File Reference

```
#include <Arduino.h>
```

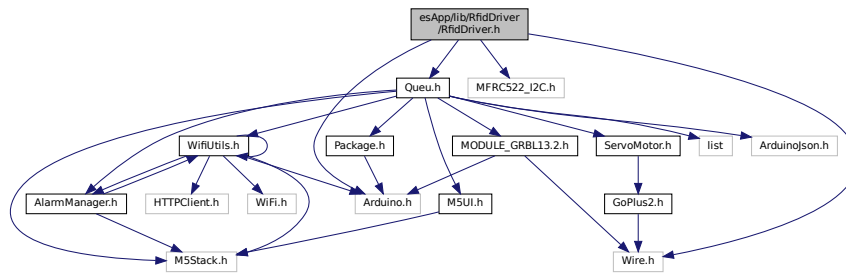
```
#include <Wire.h>
```

```
#include <MFRC522_I2C.h>
```

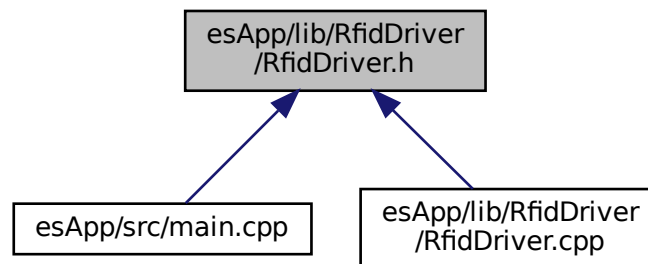


```
#include <Queue.h>
```

Include dependency graph for RfidDriver.h:



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



Classes

- class [RfidDriver](#)
- struct [RfidDriver::Variables](#)

Macros

- `#define` [RST_PIN](#) 0
- `#define` [SS_PIN](#) 0x28

4.14.1 Macro Definition Documentation

4.14.1.1 RST_PIN

```
#define RST_PIN 0
```

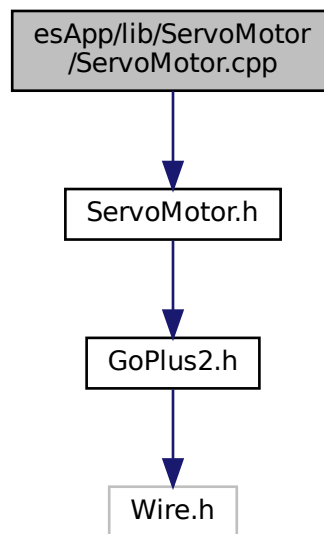
4.14.1.2 SS_PIN

```
#define SS_PIN 0x28
```

4.15 esApp/lib/ServoMotor/ServoMotor.cpp File Reference

```
#include "ServoMotor.h"
```

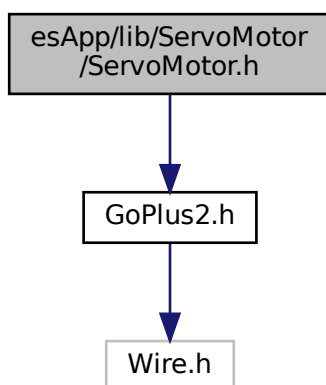
Include dependency graph for ServoMotor.cpp:



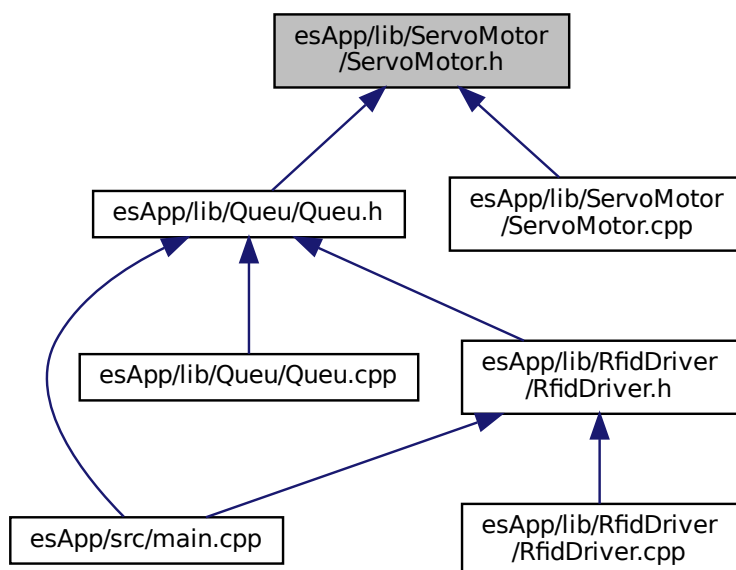
4.16 esApp/lib/ServoMotor/ServoMotor.h File Reference

```
#include <GoPlus2.h>
```

Include dependency graph for ServoMotor.h:



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



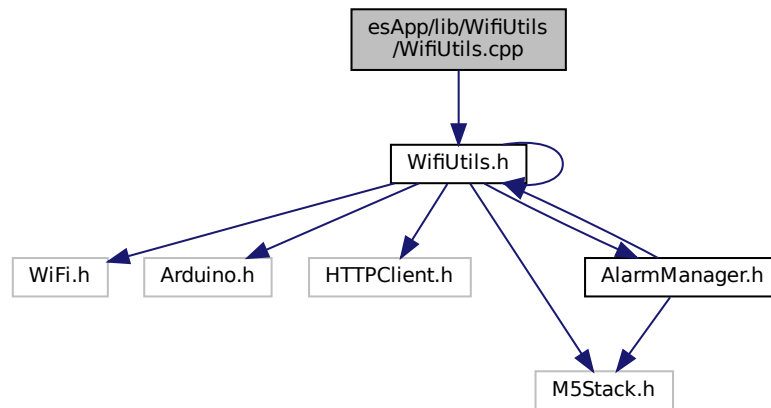
Classes

- class [ServoMotor](#)

4.17 esApp/lib/WifiUtils/WifiUtils.cpp File Reference

```
#include "WifiUtils.h"
```

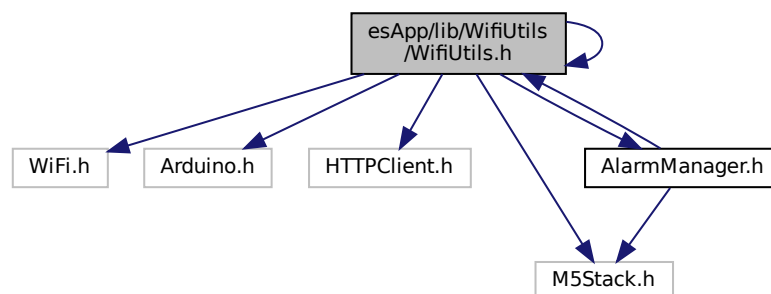
Include dependency graph for WifiUtils.cpp:



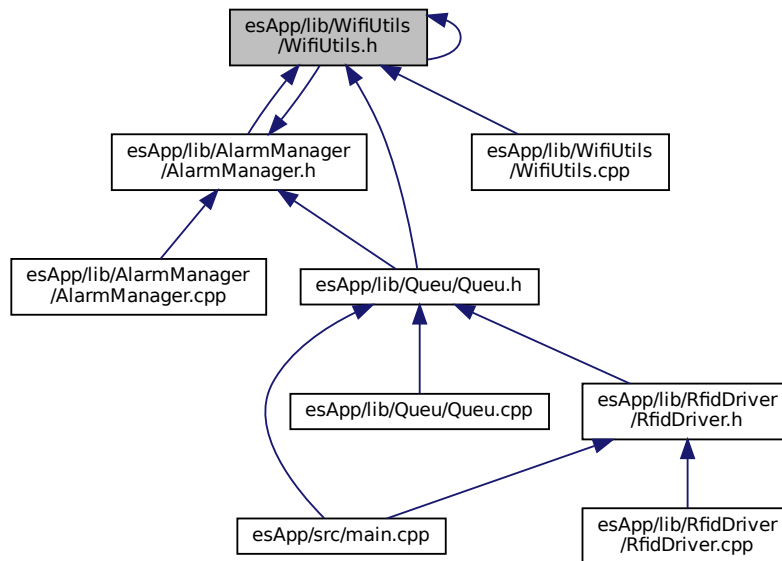
4.18 esApp/lib/WifiUtils/WifiUtils.h File Reference

```
#include <WiFi.h>
#include <Arduino.h>
#include <HTTPClient.h>
#include <M5Stack.h>
#include <AlarmManager.h>
#include <WifiUtils.h>
```

Include dependency graph for WifiUtils.h:



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



Classes

- class [WifiUtils](#)

Macros

- `#define` [WIFI_SSID](#) "Livebox-auguste-comte"
- `#define` [WIFI_PASSWORD](#) "Comte69002"
- `#define` [SERVER_ADDRESS](#) "http://192.168.1.58:8000/"

4.18.1 Macro Definition Documentation

4.18.1.1 SERVER_ADDRESS

```
#define SERVER_ADDRESS "http://192.168.1.58:8000/"
```

4.18.1.2 WIFI_PASSWORD

```
#define WIFI_PASSWORD "Comte69002"
```

4.18.1.3 WIFI_SSID

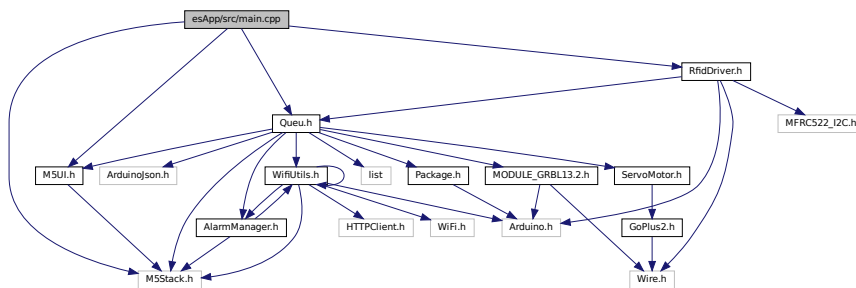
```
#define WIFI_SSID "Livebox-auguste-comte"
```

4.19 esApp/src/main.cpp File Reference

Main file of the project.

```
#include <M5Stack.h>
#include <M5UI.h>
#include <Queu.h>
#include <RfidDriver.h>
```

Include dependency graph for main.cpp:



Functions

- void [packageListener](#) ()
Listen for a package.
- void [setup](#) ()
Main function.
- void [loop](#) ()
Main loop.

Variables

- const int [MIN_DELAY_STEP_MOTOR](#) = 850
- [Queu](#) [queu](#) = [Queu](#)()
- [RfidDriver](#) [rfid](#) = [RfidDriver](#)()

4.19.1 Detailed Description

Main file of the project.

Author

Thomas DESCHOMBECK

Date

2023-02-03

4.19.2 Function Documentation

4.19.2.1 loop()

```
void loop ( )
```

Main loop.

This is the main loop of the program. It is called repeatedly until the program is stopped.

Returns

void

4.19.2.2 packageListener()

```
void packageListener ( )
```

Listen for a package.

This function listen for a package and add it to the queue if it is detected. It is called in the main loop.

Returns

void

4.19.2.3 setup()

```
void setup ( )
```

Main function.

This is the main entry point for the program. It is called once at the start of the program.

Returns

0 if the program runs successfully, non-zero otherwise

4.19.3 Variable Documentation

4.19.3.1 MIN_DELAY_STEP_MOTOR

```
const int MIN_DELAY_STEP_MOTOR = 850
```

4.19.3.2 queu

```
Queu queu = Queu()
```

4.19.3.3 rfid

```
RfidDriver rfid = RfidDriver()
```


Index

- [_Wire](#)
 - [GRBL, 14](#)
 - [_addr](#)
 - [GRBL, 14](#)
- [addr](#)
 - [GRBL, 14](#)
- [alarm](#)
 - [AlarmManager, 5](#)
- [AlarmManager, 5](#)
 - [alarm, 5](#)
 - [cantCallAPIAlarm, 6](#)
 - [initWithPackageOnDeliveryAlarm, 6](#)
 - [packageToCloseAlarm, 6](#)
- [AlarmManager.h](#)
 - [Critical, 41](#)
 - [Criticality, 41](#)
 - [Information, 41](#)
 - [Warning, 41](#)
- [angleLeft](#)
 - [ServoMotor, 32](#)
- [angleRight](#)
 - [ServoMotor, 32](#)
- [angleStraight](#)
 - [ServoMotor, 32](#)
- [append](#)
 - [Queue, 22](#)
- [appendWithUuid](#)
 - [Queue, 22](#)
- [begin](#)
 - [GoPlus2, 7](#)
- [cantCallAPIAlarm](#)
 - [AlarmManager, 6](#)
- [checkIfFrontPackagelsDelivered](#)
 - [Queue, 23](#)
- [cleanOnDeliveryPackages](#)
 - [WifiUtils, 34](#)
- [clear](#)
 - [Queue, 23](#)
- [client](#)
 - [Queue, 26](#)
- [clientWifi](#)
 - [Queue, 26](#)
- [connect](#)
 - [WifiUtils, 34](#)
- [Critical](#)
 - [AlarmManager.h, 41](#)
- [Criticality](#)
 - [AlarmManager.h, 41](#)
- [esApp/lib/AlarmManager/AlarmManager.cpp, 39](#)
- [esApp/lib/AlarmManager/AlarmManager.h, 40](#)
- [esApp/lib/GoPlus2/GoPlus2.cpp, 42](#)
- [esApp/lib/GoPlus2/GoPlus2.h, 42](#)
- [esApp/lib/GRBL/MODULE_GRBL13.2.cpp, 48](#)
- [esApp/lib/GRBL/MODULE_GRBL13.2.h, 48](#)
- [esApp/lib/M5UI/M5UI.cpp, 49](#)
- [esApp/lib/M5UI/M5UI.h, 50](#)
- [esApp/lib/Package/Package.cpp, 52](#)
- [esApp/lib/Package/Package.h, 52](#)
- [esApp/lib/Queue/Queue.cpp, 53](#)
- [esApp/lib/Queue/Queue.h, 54](#)
- [esApp/lib/RfidDriver/RfidDriver.cpp, 56](#)
- [esApp/lib/RfidDriver/RfidDriver.h, 56](#)
- [esApp/lib/ServoMotor/ServoMotor.cpp, 58](#)
- [esApp/lib/ServoMotor/ServoMotor.h, 58](#)
- [esApp/lib/WifiUtils/WifiUtils.cpp, 60](#)
- [esApp/lib/WifiUtils/WifiUtils.h, 60](#)
- [esApp/src/main.cpp, 62](#)
- [exist](#)
 - [Queue, 23](#)
- [getAll](#)
 - [Queue, 23](#)
- [getDestination](#)
 - [Package, 18](#)
- [getMotorStep](#)
 - [Package, 18](#)
- [getOnDeliveryPackage](#)
 - [WifiUtils, 35](#)
- [getPackageDestination](#)
 - [WifiUtils, 35](#)
- [getTagDetected](#)
 - [RfidDriver, 28](#)
- [getUuid](#)
 - [Package, 18](#)
- [goPlus](#)
 - [ServoMotor, 32](#)
- [GoPlus2, 7](#)
 - [begin, 7](#)
 - [GoPlus2, 7](#)
 - [hub1_a_read_value, 7](#)
 - [hub1_d_o_read_value, 8](#)
 - [hub1_d_read_value, 8](#)
 - [hub1_set_io, 8](#)
 - [hub1_wire_value, 8](#)
 - [hub2_a_read_value, 8](#)
 - [hub2_d_o_read_value, 8](#)

- hub2_d_read_value, [8](#)
- hub2_set_io, [9](#)
- hub2_wire_value, [9](#)
- hub3_a_read_value, [9](#)
- hub3_d_o_read_value, [9](#)
- hub3_d_read_value, [9](#)
- hub3_set_io, [9](#)
- hub3_wire_value, [10](#)
- Motor_write_speed, [10](#)
- Servo_write_angle, [10](#)
- Servo_write_plusewidth, [10](#)
- GoPlus2.h
 - GOPLUS_ADDR, [44](#)
 - HUB1_R_ADDR, [44](#)
 - HUB1_R_O_ADDR, [44](#)
 - HUB1_W_ADDR, [44](#)
 - HUB2_R_ADDR, [44](#)
 - HUB2_R_O_ADDR, [44](#)
 - HUB2_W_ADDR, [44](#)
 - HUB3_R_ADDR, [45](#)
 - HUB3_R_O_ADDR, [45](#)
 - HUB3_W_ADDR, [45](#)
 - HUB_IO_SET, [45](#)
 - HUB_READ_ANALOG, [45](#)
 - HUB_READ_DIGITAL, [45](#)
 - HUB_READ_O_DIGITAL, [45](#)
 - HUB_WIRE, [45](#)
 - MOTOR_ADDR, [46](#)
 - MOTOR_NUM0, [46](#)
 - MOTOR_NUM1, [46](#)
 - PLUSE_ADDR, [46](#)
 - SERVO_ADDR, [46](#)
 - SERVO_NUM0, [46](#)
 - SERVO_NUM0_PW, [46](#)
 - SERVO_NUM1, [46](#)
 - SERVO_NUM1_PW, [47](#)
 - SERVO_NUM2, [47](#)
 - SERVO_NUM2_PW, [47](#)
 - SERVO_NUM3, [47](#)
 - SERVO_NUM3_PW, [47](#)
- GOPLUS_ADDR
 - GoPlus2.h, [44](#)
- GRBL, [10](#)
 - _Wire, [14](#)
 - _addr, [14](#)
 - addr, [14](#)
 - GRBL, [11](#)
 - Init, [11](#), [12](#)
 - inLock, [12](#)
 - mode, [14](#)
 - readClean, [12](#)
 - readIdle, [12](#)
 - readLine, [12](#)
 - readStatus, [12](#)
 - sendByte, [13](#)
 - sendBytes, [13](#)
 - sendGcode, [13](#)
 - setMode, [13](#)
 - setMotor, [13](#)
 - unLock, [13](#)
 - waitIdle, [14](#)
- hub1_a_read_value
 - GoPlus2, [7](#)
- hub1_d_o_read_value
 - GoPlus2, [8](#)
- hub1_d_read_value
 - GoPlus2, [8](#)
- HUB1_R_ADDR
 - GoPlus2.h, [44](#)
- HUB1_R_O_ADDR
 - GoPlus2.h, [44](#)
- hub1_set_io
 - GoPlus2, [8](#)
- HUB1_W_ADDR
 - GoPlus2.h, [44](#)
- hub1_wire_value
 - GoPlus2, [8](#)
- hub2_a_read_value
 - GoPlus2, [8](#)
- hub2_d_o_read_value
 - GoPlus2, [8](#)
- hub2_d_read_value
 - GoPlus2, [8](#)
- HUB2_R_ADDR
 - GoPlus2.h, [44](#)
- HUB2_R_O_ADDR
 - GoPlus2.h, [44](#)
- hub2_set_io
 - GoPlus2, [9](#)
- HUB2_W_ADDR
 - GoPlus2.h, [44](#)
- hub2_wire_value
 - GoPlus2, [9](#)
- hub3_a_read_value
 - GoPlus2, [9](#)
- hub3_d_o_read_value
 - GoPlus2, [9](#)
- hub3_d_read_value
 - GoPlus2, [9](#)
- HUB3_R_ADDR
 - GoPlus2.h, [45](#)
- HUB3_R_O_ADDR
 - GoPlus2.h, [45](#)
- hub3_set_io
 - GoPlus2, [9](#)
- HUB3_W_ADDR
 - GoPlus2.h, [45](#)
- hub3_wire_value
 - GoPlus2, [10](#)
- HUB_IO_SET
 - GoPlus2.h, [45](#)
- HUB_READ_ANALOG
 - GoPlus2.h, [45](#)
- HUB_READ_DIGITAL
 - GoPlus2.h, [45](#)
- HUB_READ_O_DIGITAL

- GoPlus2.h, [45](#)
- HUB_WIRE
 - GoPlus2.h, [45](#)
- Information
 - AlarmManager.h, [41](#)
- Init
 - GRBL, [11](#), [12](#)
- init
 - M5UI, [15](#)
 - Queu, [23](#)
 - RfidDriver, [28](#)
- initMotor
 - Queu, [24](#)
- initProgressBar
 - M5UI, [15](#)
- initWifi
 - Queu, [24](#)
- initWithPackageOnDeliveryAlarm
 - AlarmManager, [6](#)
- inLock
 - GRBL, [12](#)
- INTERVAL_RFID_TO_DESTINATION
 - Package, [19](#)
- isConnected
 - WifiUtils, [35](#)
- isDelivered
 - Package, [19](#)
- lastEventUI
 - Queu, [24](#)
- loop
 - main.cpp, [63](#)
- M5STACK_FIRE_NEO_DATA_PIN
 - M5UI.h, [51](#)
- M5STACK_FIRE_NEO_NUM_LEDS
 - M5UI.h, [51](#)
- M5UI, [14](#)
 - init, [15](#)
 - initProgressBar, [15](#)
 - M5UI, [15](#)
 - notificationRFIDReadWithError, [16](#)
 - notificationRFIDReadWithSuccess, [16](#)
 - printTotalPackagesOnDelivery, [16](#)
 - printWaitPackages, [16](#)
 - runLight, [16](#)
 - speakerBipWithLight, [16](#)
- M5UI.h
 - M5STACK_FIRE_NEO_DATA_PIN, [51](#)
 - M5STACK_FIRE_NEO_NUM_LEDS, [51](#)
- m_destination
 - Package, [19](#)
- m_motorStep
 - Package, [20](#)
- m_uuid
 - Package, [20](#)
- main.cpp
 - loop, [63](#)
- MIN_DELAY_STEP_MOTOR, [63](#)
 - packageListener, [63](#)
 - queu, [63](#)
 - rfid, [63](#)
 - setup, [63](#)
- mfr522
 - RfidDriver::Variables, [33](#)
- MIN_DELAY_STEP_MOTOR
 - main.cpp, [63](#)
- MIN_INTERVAL_BETWEEN_PACKAGE
 - Queu, [26](#)
- mode
 - GRBL, [14](#)
- motor
 - Queu, [26](#)
- MOTOR_ADDR
 - GoPlus2.h, [46](#)
- MOTOR_NUM0
 - GoPlus2.h, [46](#)
- MOTOR_NUM1
 - GoPlus2.h, [46](#)
- Motor_write_speed
 - GoPlus2, [10](#)
- motorForward
 - Queu, [24](#)
- motorStepCounter
 - Queu, [26](#)
- notificationRFIDReadWithError
 - M5UI, [16](#)
- notificationRFIDReadWithSuccess
 - M5UI, [16](#)
- Package, [17](#)
 - getDestination, [18](#)
 - getMotorStep, [18](#)
 - getUuid, [18](#)
 - INTERVAL_RFID_TO_DESTINATION, [19](#)
 - isDelivered, [19](#)
 - m_destination, [19](#)
 - m_motorStep, [20](#)
 - m_uuid, [20](#)
 - Package, [18](#)
 - toJson, [19](#)
- packageListener
 - main.cpp, [63](#)
- packageToCloseAlarm
 - AlarmManager, [6](#)
- PLUSE_ADDR
 - GoPlus2.h, [46](#)
- pop_front
 - Queu, [24](#)
- postAlarm
 - WifiUtils, [35](#)
- postDeliveredPackage
 - WifiUtils, [36](#)
- postResetAlarm
 - WifiUtils, [36](#)
- printTotalPackagesOnDelivery

- M5UI, [16](#)
- printWaitPackages
 - M5UI, [16](#)
- Queu, [20](#)
 - append, [22](#)
 - appendWithUuid, [22](#)
 - checkIfFrontPackagelsDelivered, [23](#)
 - clear, [23](#)
 - client, [26](#)
 - clientWifi, [26](#)
 - exist, [23](#)
 - getAll, [23](#)
 - init, [23](#)
 - initMotor, [24](#)
 - initWifi, [24](#)
 - lastEventUI, [24](#)
 - MIN_INTERVAL_BETWEEN_PACKAGE, [26](#)
 - motor, [26](#)
 - motorForward, [24](#)
 - motorStepCounter, [26](#)
 - pop_front, [24](#)
 - Queu, [22](#)
 - queu, [26](#)
 - servoMotor, [27](#)
 - size, [25](#)
 - SPEED_STEP_MOTOR, [27](#)
 - toJson, [25](#)
 - updateServoMotor, [25](#)
 - uuidExist, [25](#)
- queu
 - main.cpp, [63](#)
 - Queu, [26](#)
- Queu.h
 - STEP_MOTOR_SCL, [55](#)
 - STEP_MOTOR_SDA, [56](#)
 - STEPMOTOR_I2C_ADDR, [56](#)
- readClean
 - GRBL, [12](#)
- readIdle
 - GRBL, [12](#)
- readLine
 - GRBL, [12](#)
- readRfid
 - RfidDriver, [29](#)
- readStatus
 - GRBL, [12](#)
- rfid
 - main.cpp, [63](#)
- RfidDriver, [27](#)
 - getTagDetected, [28](#)
 - init, [28](#)
 - readRfid, [29](#)
 - RfidDriver, [28](#)
 - setTagDetected, [29](#)
 - ShowReaderDetails, [29](#)
 - variables, [30](#)
 - vTaskRFIDInterrupt, [29](#)
- RfidDriver.h
 - RST_PIN, [57](#)
 - SS_PIN, [57](#)
- RfidDriver::Variables, [33](#)
 - mfr522, [33](#)
 - tagDetected, [33](#)
- RST_PIN
 - RfidDriver.h, [57](#)
- runLight
 - M5UI, [16](#)
- sendByte
 - GRBL, [13](#)
- sendBytes
 - GRBL, [13](#)
- sendGcode
 - GRBL, [13](#)
- sendRequest
 - WifiUtils, [36](#)
- SERVER_ADDRESS
 - WifiUtils.h, [61](#)
- SERVO_ADDR
 - GoPlus2.h, [46](#)
- SERVO_NUM0
 - GoPlus2.h, [46](#)
- SERVO_NUM0_PW
 - GoPlus2.h, [46](#)
- SERVO_NUM1
 - GoPlus2.h, [46](#)
- SERVO_NUM1_PW
 - GoPlus2.h, [47](#)
- SERVO_NUM2
 - GoPlus2.h, [47](#)
- SERVO_NUM2_PW
 - GoPlus2.h, [47](#)
- SERVO_NUM3
 - GoPlus2.h, [47](#)
- SERVO_NUM3_PW
 - GoPlus2.h, [47](#)
- Servo_write_angle
 - GoPlus2, [10](#)
- Servo_write_plusewidth
 - GoPlus2, [10](#)
- ServoMotor, [30](#)
 - angleLeft, [32](#)
 - angleRight, [32](#)
 - angleStraight, [32](#)
 - goPlus, [32](#)
 - ServoMotor, [31](#)
 - speed, [32](#)
 - turn, [31](#)
 - turnLeft, [31](#)
 - turnRight, [31](#)
 - turnStraight, [32](#)
- servoMotor
 - Queu, [27](#)
- setMode
 - GRBL, [13](#)
- setMotor

- GRBL, [13](#)
- setTagDetected
 - RfidDriver, [29](#)
- setup
 - main.cpp, [63](#)
- ShowReaderDetails
 - RfidDriver, [29](#)
- size
 - Queu, [25](#)
- speakerBipWithLight
 - M5UI, [16](#)
- speed
 - ServoMotor, [32](#)
- SPEED_STEP_MOTOR
 - Queu, [27](#)
- SS_PIN
 - RfidDriver.h, [57](#)
- STEP_MOTOR_SCL
 - Queu.h, [55](#)
- STEP_MOTOR_SDA
 - Queu.h, [56](#)
- STEPMOTOR_I2C_ADDR
 - Queu.h, [56](#)
- tagDetected
 - RfidDriver::Variables, [33](#)
- toJson
 - Package, [19](#)
 - Queu, [25](#)
- turn
 - ServoMotor, [31](#)
- turnLeft
 - ServoMotor, [31](#)
- turnRight
 - ServoMotor, [31](#)
- turnStraight
 - ServoMotor, [32](#)
- unLock
 - GRBL, [13](#)
- updateServoMotor
 - Queu, [25](#)
- URL_ALARM
 - WifiUtils, [37](#)
- URL_DELIVERED
 - WifiUtils, [37](#)
- URL_DESTINATION
 - WifiUtils, [37](#)
- URL_ON_DELIVERY
 - WifiUtils, [37](#)
- URL_RESET_ALARM
 - WifiUtils, [37](#)
- uuidExist
 - Queu, [25](#)
- variables
 - RfidDriver, [30](#)
- vTaskRFIDInterrupt
 - RfidDriver, [29](#)
- waitIdle
 - GRBL, [14](#)
- Warning
 - AlarmManager.h, [41](#)
- WIFI_PASSWORD
 - WifiUtils.h, [61](#)
- WIFI_SSID
 - WifiUtils.h, [61](#)
- WifiUtils, [33](#)
 - cleanOnDeliveryPackages, [34](#)
 - connect, [34](#)
 - getOnDeliveryPackage, [35](#)
 - getPackageDestination, [35](#)
 - isConnected, [35](#)
 - postAlarm, [35](#)
 - postDeliveredPackage, [36](#)
 - postResetAlarm, [36](#)
 - sendRequest, [36](#)
 - URL_ALARM, [37](#)
 - URL_DELIVERED, [37](#)
 - URL_DESTINATION, [37](#)
 - URL_ON_DELIVERY, [37](#)
 - URL_RESET_ALARM, [37](#)
- WifiUtils.h
 - SERVER_ADDRESS, [61](#)
 - WIFI_PASSWORD, [61](#)
 - WIFI_SSID, [61](#)