

UART Handler for UART Driver for STM32F103

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Chapter 1

File Index

1.1 File List

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

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Chapter 2

File Documentation

2.1 HUART/HUART.c File Reference

This file is the Implementation for UART Handler for UART Driver in STM32F103.

```
#include "STD_TYPES.h"
#include "DRCC.h"
#include "DGPIO.h"
#include "DMA.h"
#include "UART.h"
#include "UART_Private.h"
#include "HUART.h"
#include "HUART_config.h"
```

Macros

- #define [UART_DMA_TX_ENABLE](#) 0x00000080
Enable Uart Transmit With DMA Mode.
- #define [UART_DMA_RX_ENABLE](#) 0x00000040
Enable Uart Recieve with DMA Mode.
- #define [LIN_ENABLE](#) 0x00004000
Enable LIN.
- #define [LIN_BREAK_SIZE](#) 0x00000020
Size of LIN Break Frame
- #define [LIN_INTERRUPT_ENABLE](#) 0x00000040
Enable Interrupt for LIN

Functions

- uint_8t [HUART_Init](#) (void)
Function initilaize HUART.
- uint_8t [HUART_Send](#) (uint_8t *Buffer, uint_16t Length)
Function sends bytes using UART.
- uint_8t [HUART_Receive](#) (uint_8t *Buffer, uint_16t Length)
Function receives bytes using UART.
- uint_8t [HUART_Config](#) (uint_32t BaudRate, uint_32t ParityBits, uint_32t DataSize, uint_32t StopBits)
Function configure HUART.
- uint_8t [HUART_SetTxCbf](#) ([TxCbf_t](#) TxCbf)
Function sets the send call back function.
- uint_8t [HUART_SetRxCbf](#) ([RxCbf_t](#) RxCbf)
Function sets the Received call back function.
- uint_8t [HUART_SetLBDcbf](#) ([LBDcbf_t](#) LBDcbf)
Function sets the LIN Break call back function.
- uint_8t [HUART_SendBreak](#) (void)
Function of Send LIN Break

Variables

- [Notify_t Notification_Send](#)
- [Notify_t Notification_Receive](#)
- uint_8t [UART_mode](#) = [INTERRUPT_MODE](#)
- uint_32t [Clk](#)

2.1.1 Detailed Description

This file is the Implementation for UART Handler for UART Driver in STM32F103.

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Version

0.1

Date

2020-06-05

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2.1.2 Function Documentation

2.1.2.1 HUART_Config()

```
uint_8t HUART_Config (
    uint_32t BaudRate,
    uint_32t ParityBits,
    uint_32t DataSize,
    uint_32t StopBits )
```

Function configure HUART.

Parameters

<i>BaudRate</i>	Variable of uint_32t, variable that contains Baud Rate
<i>ParityBits</i>	Variable of uint_32t, variable that contains ParityState ex (PARITY_DISABLED, PARITY_EVEN)
<i>DataSize</i>	Variable of uint_32t, variable that contains DataSize (DATA_8_BITS OR DATA_9_BITS)
<i>StopBits</i>	Variable of uint_32t, variable that contains number of StopBits (ONE_STOP_BIT OR TWO_STOP_BIT)

Returns

uint_8t : OK | NOK

2.1.2.2 HUART_Init()

```
uint_8t HUART_Init (
    void )
```

Function initilaize HUART.

Parameters

NA	
----	--

Returns

uint_8t : OK | NOK

2.1.2.3 HUART_Receive()

```
uint_8t HUART_Receive (
    uint_8t * Buffer,
    uint_16t Length )
```

Function receives bytes using UART.

Parameters

<i>Buffer</i>	Pointer to uint_8t, pointer that receive bytes
<i>Length</i>	Variable of uint_16t, variable that contains the Received bytes

Returns

uint_8t : OK | NOK

2.1.2.4 HUART_Send()

```
uint_8t HUART_Send (
    uint_8t * Buffer,
    uint_16t Length )
```

Function sends bytes using UART.

Parameters

<i>Buffer</i>	Pointer to uint_8t, pointer that contain the bytes to be sent
<i>Length</i>	Variable of uint_16t, variable that contains the number of Bytes to be sent

Returns

uint_8t : OK | NOK

2.1.2.5 HUART_SendBreak()

```
uint_8t HUART_SendBreak (
    void )
```

Function of Send LIN Break

Parameters

NA	
----	--

Returns

uint_8t : OK | NOK

2.1.2.6 HUART_SetLBDCbf()

```
uint_8t HUART_SetLBDCbf (
    LBDCbf_t LBDCbf )
```

Function sets the LIN Break call back function.

Parameters

<i>LBDCbf</i>	Pointer to function , Take address of call back fuction
---------------	---

Returns

uint_8t : OK | NOK

2.1.2.7 HUART_SetRxCbf()

```
uint_8t HUART_SetRxCbf (
    RxCbf_t RxCbf )
```

Function sets the Received call back function.

Parameters

<i>RxCbf</i>	Pointer to function , Take address of call back fuction
--------------	---

Returns

uint_8t : OK | NOK

2.1.2.8 HUART_SetTxCbff()

```
uint_8t HUART_SetTxCbff (
    TxCbfff_t TxCbfff )
```

Function sets the send call back function.

Parameters

<i>TxCbfff</i>	Pointer to function , Take address of call back fuction
----------------	---

Returns

uint_8t : OK | NOK

2.2 HUART/HUART.h File Reference

This file is the User Interface for UART Handler for UART Driver in STM32F103.

Typedefs

- typedef void(* [TxCbf_t](#)) (void)
Pointer to function of TX Call Back Function.
- typedef void(* [RxCbf_t](#)) (void)
Pointer to function of RX Call Back Function.
- typedef void(* [LBDCbf_t](#)) (void)
Pointer to function of LIN Break Call Back Function.

Functions

- uint_8t [HUART_Init](#) (void)
Function initilaize HUART.
- uint_8t [HUART_Send](#) (uint_8t *Buffer, uint_16t Length)
Function sends bytes using UART.
- uint_8t [HUART_Receive](#) (uint_8t *Buffer, uint_16t Length)
Function receives bytes using UART.
- uint_8t [HUART_Config](#) (uint_32t BaudRate, uint_32t ParityBits, uint_32t DataSize, uint_32t StopBits)
Function configure HUART.
- uint_8t [HUART_SetTxCbf](#) ([TxCbf_t](#) TxCbf)
Function sets the send call back function.
- uint_8t [HUART_SetRxCbf](#) ([RxCbf_t](#) RxCbf)
Function sets the Received call back function.
- uint_8t [HUART_SetLBDCbf](#) ([LBDCbf_t](#) LBDCbf)
Function sets the LIN Break call back function.
- uint_8t [HUART_SendBreak](#) (void)
Function of Send LIN Break

2.2.1 Detailed Description

This file is the User Interface for UART Handler for UART Driver in STM32F103.

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Version

0.1

Date

2020-06-05

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2.2.2 Function Documentation

2.2.2.1 HUART_Config()

```
uint_8t HUART_Config (
    uint_32t BaudRate,
    uint_32t ParityBits,
    uint_32t DataSize,
    uint_32t StopBits )
```

Function configure HUART.

Parameters

<i>BaudRate</i>	Variable of uint_32t, variable that contains Baud Rate
<i>ParityBits</i>	Variable of uint_32t, variable that contains ParityState ex (PARITY_DISABLED, PARITY_EVEN)
<i>DataSize</i>	Variable of uint_32t, variable that contains DataSize (DATA_8_BITS OR DATA_9_BITS)
<i>StopBits</i>	Variable of uint_32t, variable that contains number of StopBits (ONE_STOP_BIT OR TWO_STOP_BIT)

Returns

uint_8t : OK | NOK

2.2.2.2 HUART_Init()

```
uint_8t HUART_Init (
    void )
```

Function initilaize HUART.

Parameters

NA	
----	--

Returns

uint_8t : OK | NOK

2.2.2.3 HUART_Receive()

```
uint_8t HUART_Receive (
    uint_8t * Buffer,
    uint_16t Length )
```

Function receives bytes using UART.

Parameters

<i>Buffer</i>	Pointer to uint_8t, pointer that receive bytes
<i>Length</i>	Variable of uint_16t, variable that contains the Received bytes

Returns

uint_8t : OK | NOK

2.2.2.4 HUART_Send()

```
uint_8t HUART_Send (
    uint_8t * Buffer,
    uint_16t Length )
```

Function sends bytes using UART.

Parameters

<i>Buffer</i>	Pointer to uint_8t, pointer that contain the bytes to be sent
<i>Length</i>	Variable of uint_16t, variable that contains the number of Bytes to be sent

Returns

uint_8t : OK | NOK

2.2.2.5 HUART_SendBreak()

```
uint_8t HUART_SendBreak (
    void )
```

Function of Send LIN Break

Parameters

<i>NA</i>	
-----------	--

Returns

uint_8t : OK | NOK

2.2.2.6 HUART_SetLBDCbf()

```
uint_8t HUART_SetLBDCbf (
    LBDCbf_t LBDCbf )
```

Function sets the LIN Break call back function.

Parameters

<i>LBDCbf</i>	Pointer to function , Take address of call back fuction
---------------	---

Returns

uint_8t : OK | NOK

2.2.2.7 HUART_SetRxCbf()

```
uint_8t HUART_SetRxCbf (
    RxCbf_t RxCbf )
```

Function sets the Received call back function.

Parameters

<i>RxCbf</i>	Pointer to function , Take address of call back fuction
--------------	---

Returns

uint_8t : OK | NOK

2.2.2.8 HUART_SetTxCbff()

```
uint_8t HUART_SetTxCbff (
    TxCbfff_t TxCbfff )
```

Function sets the send call back function.

Parameters

<i>TxCbfff</i>	Pointer to function , Take address of call back fuction
----------------	---

Returns

uint_8t : OK | NOK

2.3 HUART/HUART_config.h File Reference

This file is the Configuration for UART Handler for UART Driver in STM32F103.

Macros

- `#define SEND_MODE_INTERRUPT 0`
Interrupt Mode for Sending.
- `#define SEND_MODE_DMA 1`
DMA Mode for Sending
- `#define RECEIVE_MODE_INTERRUPT 0`
Interrupt Mode for Receiving.
- `#define RECEIVE_MODE_DMA 1`
DMA Mode for Receiving
- `#define LIN_ON 0`
Enable LIN.
- `#define LIN_OFF 1`
Disable LIN.
- `#define INTERRUPT_MODE 0`
used to Enable Interrupt Mode
- `#define DMA_MODE 1`
used to Enable DMA Mode
- `#define PARITY_DISABLED 0x00000000`
used to Disable Parity
- `#define PARITY_EVEN 0x00000400`
used to Enable Even Parity
- `#define PARITY_ODD 0x00000600`
used to Enable ODD Parity
- `#define ONE_STOP_BIT 0x00000000`
used to Enable One Stop Bit
- `#define TWO_STOP_BIT 0x00002000`
used to Enable Two Stop Bit
- `#define DATA_8_BITS 0x00000000`
used to Enable 8 Data bits
- `#define DATA_9_BITS 0x00001000`
- `#define PARITY_BIT PARITY_DISABLED`
used to Configure Parity Bit (PARITY_DISABLED OR PARITY_EVEN OR PARITY_ODD)
- `#define STOP_BITS ONE_STOP_BIT`
used to Configure Stop Bits (ONE_STOP_BIT OR TWO_STOP_BIT)
- `#define DATA_BITS DATA_8_BITS`
used to Configure Data Bits (DATA_8_BITS OR DATA_9_BITS)
- `#define BAUD_RATE_9600 9600`
Baud Rate is 9600.
- `#define BAUD_RATE_115200 115200`
Baud Rate is 115200.
- `#define SEND_MODE SEND_MODE_DMA`
used to Configure Mode (SEND_MODE_INTERRUPT OR SEND_MODE_DMA)
- `#define RECEIVE_MODE RECEIVE_MODE_DMA`

- used to Configure Mode (RECEIVE_MODE_DMA OR RECEIVE_MODE_INTERRUPT)*
 - #define [MODE_DMA_MODE](#)
used to Configure Mode (DMA_MODE OR INTERRUPT_MODE)
- #define [LIN_MODE LIN_ON](#)
used to Enable LIN
- #define [BAUD_RATE BAUD_RATE_115200](#)
used to Configure Baud Rate (BAUD_RATE_115200 OR BAUD_RATE_9600)

2.3.1 Detailed Description

This file is the Configuration for UART Handler for UART Driver in STM32F103.

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Version

0.1

Date

2020-06-05

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2.3.2 Macro Definition Documentation

2.3.2.1 DATA_8_BITS

```
#define DATA_8_BITS 0x00000000
```

used to Enable 8 Data bits

used to Enable 9 Data bits

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