

I2C Drivers For **AVR** Microcontrollers

LOW LEVEL DESIGN Document

1. API specification

1.1 Type definitions

Name:	I2C_Address
Type:	#define
Element:	Uint8
Description:	Hold address

Name:	I2C_BaudRate
Type:	#define
Element:	Uint16
Description:	Hold bandrate

Name:	TWI_ConfigType
Type:	Struct
Element:	I2C_Address address; I2C_BaudRate bit_rate;
Description:	Struct for initialize I2C.

2. Function definitions

Service name:	TWI_init
Syntax:	TWI_init(const TWI_ConfigType * Config_Ptr);
Parameters (in):	TWI_ConfigType * Config_Ptr
Parameters (in/out):	NONE

Parameters (out):	NONE
Return value:	NONE
Description:	The function make the initialization for I2C
Requirements:	[I2C_002]

Service name:	TWI_start
Syntax:	TWI_start(void);
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	Error
Description:	This function used start I2C
Requirements:	[I2C_003]

Service name:	TWI_stop
Syntax:	void TWI_stop (void);
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	NONE
Description:	This function used to stop the I2C
Requirements:	[I2C_004]

Service name:	TWI_writeByte
Syntax:	void TWI_writeByte (uint8 data);
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	NONE

Description:	This function used to write data in data register
Requirements:	[I2C_005]

Service name:	TWI_readByteWithACK
Syntax:	uint8 TWI_readByteWithACK(void);
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	TWDR
Description:	This function used to read data and return it with ACK
Requirements:	[I2C_006]

Service name:	TWI_readByteWithNACK
Syntax:	Uin8 TWI_readByteWithNACK (void);
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	NONE
Description:	This function used to read data and return it with ACK
Requirements:	[I2C_006]

Service name:	TWI_getStatus
Syntax:	uint8 TWI_getStatus(void)
Parameters (in):	NONE
Parameters (in/out):	NONE
Parameters (out):	NONE
Return value:	Error
Description:	This function used to get the status
Requirements:	[IC2_008]