Document Name	Documentation of IR sensor Driver (SWS&SRS)
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1) Introduction and functional overview

An infrared sensor (IR sensor) is a radiation-sensitive optoelectronic component with a spectral sensitivity in the infrared wavelength range 780 nm … 50 µm. IR sensors are now widely used in motion detectors, which are used in building services to switch on lamps or in alarm systems to detect unwelcome guests. In a defined angle range, the sensor elements detect the heat radiation (infrared radiation) that changes over time and space due to the movement of people**.**

Purpose

An infrared or IR sensor is an electrical device that measures a distance between itself and an object placed within a certain distance, by emitting infrared waves and recieving the reflected waves.

2) Functional specification

- [SWS_IRsensor_00059] The *Function to Initialize the IR-Sensor module*

- *Error classification*
- Development Errors

Type of Error	Related Error Code	Error Value
IR_Invalid_Initialization	• Invalid channel requested • Invalid port requested	0

3)API specification

Imported types

In this chapter all types included from the following modules are listed:

Module	Header File	Imported types
LIB	STD_TYPES	U8 (typedef)
		OK (Error State)
		NOK (Error State)

4)Function definitions

Function Name	HAL_IR_Void_Init
Syntax	IR_Invalid_Initialization HAL_IR_Void_Init()
Synch/Asynch	Synchronous
Reentrancy	Reentrant
Parameters (In)	None
Parameters (Out)	None
Parameters (In/Out)	None
Return Value	ErrorState_t | • OK • NOK
Description	Function to Initialize the IR-Sensor module
Available Via	-IR_Interface.h -IR_Config.h -IR_Private.h

Sequence Diagrams

The diagrams below show the sequences when send beam of IR sensor and receive it they show normal operation mode.