# Portable Impedance Tomography

0.1

Generated by Doxygen 1.8.11

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# Chapter 1

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## 1.1 Data Structures

Here are the data structures with brief descriptions:

# Chapter 2

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## 2.1 File List

Here is a list of all files with brief descriptions:

# Chapter 3

# Data Structure Documentation

## 3.1 ad5933_deviceConfig Struct Reference

`#include <ad5933.h>`

### Data Fields

- uint32_t **clockFreq**
- uint8_t **address**

### 3.1.1 Detailed Description

Definition at line 106 of file ad5933.h.

### 3.1.2 Field Documentation

#### 3.1.2.1 uint8_t address

Definition at line 109 of file ad5933.h.

#### 3.1.2.2 uint32_t clockFreq

Definition at line 108 of file ad5933.h.

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

- /home/ashton/repo/portable_impedance_tomography/software/ad5933/**ad5933.h**

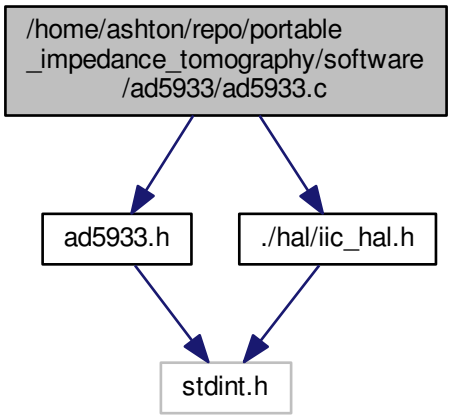
# Chapter 4

# File Documentation

## 4.1 /home/ashton/repo/portable_impedance_tomography/software/ad5933/ad5933.c File Reference

```
#include "ad5933.h"
#include "./hal/iic_hal.h"
```

Include dependency graph for ad5933.c:




### Functions

- uint8_t **ad5933_PerformFrequencySweep** (**ad5933_deviceConfig** *config, uint32_t startFreq, uint32_t incrementFreq, uint16_t numOfIncrements, uint16_t *realArray, uint16_t *imagArray)
- uint8_t **ad5933_ConvertFreq** (**ad5933_deviceConfig** *config, uint32_t desiredFreq, uint8_t *freqMsb, uint8_t *freqMid, uint8_t *freqLsb)
- uint8_t **ad5933_SetStartFreq** (**ad5933_deviceConfig** *config, uint32_t desiredFreq)
- uint8_t **ad5933_SetIncrFreq** (**ad5933_deviceConfig** *config, uint32_t desiredFreq)
- uint8_t **ad5933_SetIncrCount** (**ad5933_deviceConfig** *config, uint16_t incrNum)

- uint8_t **ad5933_SetSettleTime** (**ad5933_deviceConfig** ∗config, uint16_t cycles, uint8_t factor)
- uint8_t **ad5933_GetStatus** (**ad5933_deviceConfig** ∗config, uint8_t ∗result)
- uint8_t **ad9533_WaitForValidTemp** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad9533_WaitForValidImpedance** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad9533_WaitForSweepComplete** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_ReadTempResult** (**ad5933_deviceConfig** ∗config, int16_t ∗temp)
- uint8_t **ad5933_ReadRealResult** (**ad5933_deviceConfig** ∗config, int16_t ∗real)
- uint8_t **ad5933_ReadImagResult** (**ad5933_deviceConfig** ∗config, int16_t ∗imag)
- uint8_t **ad5933_InitWithStartFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_StartSweep** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_IncrementFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_RepeatFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_MeasureTemp** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_PowerDown** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_Standby** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_Stop** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetPGAx1** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetPGAx5** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetVoutRange** (**ad5933_deviceConfig** ∗config, uint8_t range)

### 4.1.1 Function Documentation

#### 4.1.1.1 uint8_t ad5933_ConvertFreq ( ad5933_deviceConfig ∗ *config,* uint32_t *desiredFreq,* uint8_t ∗ *freqMsb,* uint8_t ∗ *freqMid,* uint8_t ∗ *freqLsb* )

Definition at line 65 of file ad5933.c.

#### 4.1.1.2 uint8_t ad5933_GetStatus ( ad5933_deviceConfig ∗ *config,* uint8_t ∗ *result* )

Definition at line 178 of file ad5933.c.

#### 4.1.1.3 uint8_t ad5933_IncrementFreq ( ad5933_deviceConfig ∗ *config* )

Definition at line 391 of file ad5933.c.

#### 4.1.1.4 uint8_t ad5933_InitWithStartFreq ( ad5933_deviceConfig ∗ *config* )

Definition at line 346 of file ad5933.c.

#### 4.1.1.5 uint8_t ad5933_MeasureTemp ( ad5933_deviceConfig ∗ *config* )

Definition at line 437 of file ad5933.c.

#### 4.1.1.6 uint8_t ad5933_PerformFrequencySweep ( ad5933_deviceConfig ∗ *config,* uint32_t *startFreq,* uint32_t *incrementFreq,* uint16_t *numOfIncrements,* uint16_t ∗ *realArray,* uint16_t ∗ *imagArray* )

Definition at line 32 of file ad5933.c.

#### 4.1.1.7 uint8_t ad5933_PowerDown ( ad5933_deviceConfig * *config* )

Definition at line 460 of file ad5933.c.

#### 4.1.1.8 uint8_t ad5933_ReadImagResult ( ad5933_deviceConfig * *config,* int16_t * *imag* )

Definition at line 316 of file ad5933.c.

#### 4.1.1.9 uint8_t ad5933_ReadRealResult ( ad5933_deviceConfig * *config,* int16_t * *real* )

Definition at line 288 of file ad5933.c.

#### 4.1.1.10 uint8_t ad5933_ReadTempResult ( ad5933_deviceConfig * *config,* int16_t * *temp* )

Definition at line 259 of file ad5933.c.

#### 4.1.1.11 uint8_t ad5933_RepeatFreq ( ad5933_deviceConfig * *config* )

Definition at line 414 of file ad5933.c.

#### 4.1.1.12 uint8_t ad5933_SetIncrCount ( ad5933_deviceConfig * *config,* uint16_t *incrNum* )

Definition at line 136 of file ad5933.c.

#### 4.1.1.13 uint8_t ad5933_SetIncrFreq ( ad5933_deviceConfig * *config,* uint32_t *desiredFreq* )

Definition at line 110 of file ad5933.c.

#### 4.1.1.14 uint8_t ad5933_SetPGAx1 ( ad5933_deviceConfig * *config* )

Definition at line 525 of file ad5933.c.

#### 4.1.1.15 uint8_t ad5933_SetPGAx5 ( ad5933_deviceConfig * *config* )

Definition at line 547 of file ad5933.c.

#### 4.1.1.16 uint8_t ad5933_SetSettleTime ( ad5933_deviceConfig * *config,* uint16_t *cycles,* uint8_t *factor* )

Definition at line 157 of file ad5933.c.

#### 4.1.1.17 uint8_t ad5933_SetStartFreq ( ad5933_deviceConfig * *config,* uint32_t *desiredFreq* )

Definition at line 83 of file ad5933.c.

#### 4.1.1.18 uint8_t ad5933_SetVoutRange ( ad5933_deviceConfig * *config,* uint8_t *range* )

Definition at line 569 of file ad5933.c.

#### 4.1.1.19 uint8_t ad5933_Standby ( ad5933_deviceConfig * *config* )

Definition at line 482 of file ad5933.c.

#### 4.1.1.20 uint8_t ad5933_StartSweep ( ad5933_deviceConfig * *config* )

Definition at line 369 of file ad5933.c.

#### 4.1.1.21 uint8_t ad5933_Stop ( ad5933_deviceConfig * *config* )

Definition at line 504 of file ad5933.c.

#### 4.1.1.22 uint8_t ad9533_WaitForSweepComplete ( ad5933_deviceConfig * *config* )

Definition at line 233 of file ad5933.c.

#### 4.1.1.23 uint8_t ad9533_WaitForValidImpedance ( ad5933_deviceConfig * *config* )

Definition at line 211 of file ad5933.c.

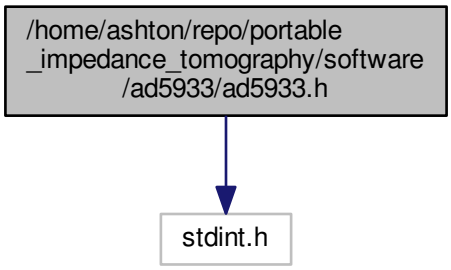
#### 4.1.1.24 uint8_t ad9533_WaitForValidTemp ( ad5933_deviceConfig * *config* )

Definition at line 189 of file ad5933.c.

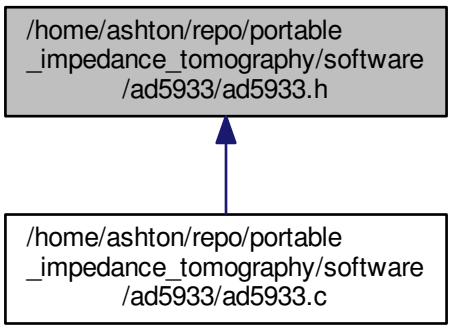
## 4.2 /home/ashton/repo/portable_impedance_tomography/software/ad5933/ad5933.h File Reference

```
#include "stdint.h"
```

Include dependency graph for ad5933.h:




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




### Data Structures

- struct **ad5933_deviceConfig**

### Macros

- #define **REG_CONTROL** 0x80
- #define **REG_CONTRO_NUM_BYTES** 2
- #define **REG_CONTROL_MSB REG_CONTROL**

- #define **REG_CONTROL_LSB** 0x81
- #define **REG_START_FREQ** 0x82
- #define **REG_START_FREQ_NUM_BYTES** 3
- #define **FREQ_MAX_SIZE** 0xFFFFFF
- #define **REG_FREQ_INCR** 0x85
- #define **REG_FREQ_INCR_NUM_BYTES** 3
- #define **REG_NUM_INCR** 0x88
- #define **REG_NUM_INCR_NUM_BYTES** 2
- #define **NUM_INCR_MAX** 511
- #define **REG_NUM_SETTLE_CYCLES** 0x8A
- #define **REG_NUM_SETTLE_CYCLES_NUM_BYTES** 2
- #define **NUM_SETTLE_CYCLES_MAX** 511
- #define **REG_STATUS** 0x8F
- #define **REG_STATUS_NUM_BYTES** 1
- #define **REG_TEMP** 0x92
- #define **REG_TEMP_NUM_BYTES** 2
- #define **REG_REAL** 0x94
- #define **REG_REAL_NUM_BYTES** 2
- #define **REG_REAL_MSB REG_REAL**
- #define **REG_REAL_LSB** 0x95
- #define **REG_IMAG** 0x96
- #define **REG_IMAG_NUM_BYTES** 2
- #define **REG_IMAG_MSB REG_IMAG**
- #define **REG_IMAG_LSB** 0x97
- #define **CONTROL_REG_NOP** (0x00 << 4)
- #define **CONTROL_REG_INIT_W_START_FREQ** (0x01 << 4)
- #define **CONTROL_REG_START_FREQ_SWEEP** (0x02 << 4)
- #define **CONTROL_REG_INCR_FREQ** (0x03 << 4)
- #define **CONTROL_REG_REPEAT_FREQ** (0x04 << 4)
- #define **CONTROL_REG_MEAS_TEMP** (0x09 << 4)
- #define **CONTROL_REG_PWR_DOWN** (0x0A << 4)
- #define **CONTROL_REG_STANDBY** (0x0B << 4)
- #define **CONTROL_OUT_VOLT_BITMASK** 0x02
- #define **CONTROL_OUT_VOLT_2VPP** (0x00 << 1)
- #define **CONTROL_OUT_VOLT_200MVPP** (0x01 << 1)
- #define **CONTROL_OUT_VOLT_400MVPP** (0x02 << 1)
- #define **CONTROL_OUT_VOLT_1VPP** (0x03 << 1)
- #define **CONTROL_PGA_x5** (0x0000 << 8)
- #define **CONTROL_PGA_x1** (0x0001 << 8)
- #define **CONTROL_RESET** (0x0001 << 4)
- #define **CONTROL_CLK_EXT** (0x0001 << 3)
- #define **CONTROL_CLK_EXT** (0x0001 << 3)
- #define **STATUS_VALID_TEMP** 0x01
- #define **STATUS_VALID_IMPEDANCE** 0x02
- #define **STATUS_SWEEP_COMPLETE** 0x04

## Typedefs

- typedef struct **ad5933_deviceConfig ad5933_deviceConfig**

### Functions

- uint8_t **ad5933_Init** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_PerformFrequencySweep** (**ad5933_deviceConfig** ∗config, uint32_t startFreq, uint32_t incrementFreq, uint16_t numOfIncrements, uint16_t ∗realArray, uint16_t ∗imagArray)
- uint8_t **ad5933_ConvertFreq** (**ad5933_deviceConfig** ∗config, uint32_t desiredFreq, uint8_t ∗freqMsb, uint8_t ∗freqMid, uint8_t ∗freqLsb)
- uint8_t **ad5933_SetStartFreq** (**ad5933_deviceConfig** ∗config, uint32_t desiredFreq)
- uint8_t **ad5933_SetIncrFreq** (**ad5933_deviceConfig** ∗config, uint32_t desiredFreq)
- uint8_t **ad5933_SetIncrCount** (**ad5933_deviceConfig** ∗config, uint16_t incrNum)
- uint8_t **ad5933_SetSettleTime** (**ad5933_deviceConfig** ∗config, uint16_t cycles, uint8_t factor)
- uint8_t **ad5933_GetStatus** (**ad5933_deviceConfig** ∗config, uint8_t ∗result)
- uint8_t **ad9533_WaitForValidTemp** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad9533_WaitForValidImpedance** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad9533_WaitForSweepComplete** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_ReadRealResult** (**ad5933_deviceConfig** ∗config, int16_t ∗real)
- uint8_t **ad5933_ReadImagResult** (**ad5933_deviceConfig** ∗config, int16_t ∗imag)
- uint8_t **ad5933_InitWithStartFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_StartSweep** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_IncrementFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_RepeatFreq** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_MeasureTemp** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_PowerDown** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_Standby** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_Stop** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetPGAx1** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetPGAx5** (**ad5933_deviceConfig** ∗config)
- uint8_t **ad5933_SetVoutRange** (**ad5933_deviceConfig** ∗config, uint8_t range)

### 4.2.1 Macro Definition Documentation

#### 4.2.1.1 #define CONTROL_CLK_EXT (0x0001 << 3)

Definition at line 97 of file ad5933.h.

#### 4.2.1.2 #define CONTROL_CLK_EXT (0x0001 << 3)

Definition at line 97 of file ad5933.h.

#### 4.2.1.3 #define CONTROL_OUT_VOLT_1VPP (0x03 << 1)

Definition at line 89 of file ad5933.h.

#### 4.2.1.4 #define CONTROL_OUT_VOLT_200MVPP (0x01 << 1)

Definition at line 87 of file ad5933.h.

#### 4.2.1.5 #define CONTROL_OUT_VOLT_2VPP (0x00 << 1)

Definition at line 86 of file ad5933.h.

#### 4.2.1.6 #define CONTROL_OUT_VOLT_400MVPP (0x02 << 1)

Definition at line 88 of file ad5933.h.

#### 4.2.1.7 #define CONTROL_OUT_VOLT_BITMASK 0x02

Definition at line 85 of file ad5933.h.

#### 4.2.1.8 #define CONTROL_PGA_x1 (0x0001 << 8)

Definition at line 92 of file ad5933.h.

#### 4.2.1.9 #define CONTROL_PGA_x5 (0x0000 << 8)

Definition at line 91 of file ad5933.h.

#### 4.2.1.10 #define CONTROL_REG_INCR_FREQ (0x03 << 4)

Definition at line 79 of file ad5933.h.

#### 4.2.1.11 #define CONTROL_REG_INIT_W_START_FREQ (0x01 << 4)

Definition at line 77 of file ad5933.h.

#### 4.2.1.12 #define CONTROL_REG_MEAS_TEMP (0x09 << 4)

Definition at line 81 of file ad5933.h.

#### 4.2.1.13 #define CONTROL_REG_NOP (0x00 << 4)

Definition at line 76 of file ad5933.h.

#### 4.2.1.14 #define CONTROL_REG_PWR_DOWN (0x0A << 4)

Definition at line 82 of file ad5933.h.

#### 4.2.1.15 #define CONTROL_REG_REPEAT_FREQ (0x04 << 4)

Definition at line 80 of file ad5933.h.

#### 4.2.1.16 #define CONTROL_REG_STANDBY (0x0B << 4)

Definition at line 83 of file ad5933.h.

#### 4.2.1.17 #define CONTROL_REG_START_FREQ_SWEEP (0x02 << 4)

Definition at line 78 of file ad5933.h.

#### 4.2.1.18 #define CONTROL_RESET (0x0001 << 4)

Definition at line 94 of file ad5933.h.

#### 4.2.1.19 #define FREQ_MAX_SIZE 0xFFFFFF

Definition at line 42 of file ad5933.h.

#### 4.2.1.20 #define NUM_INCR_MAX 511

Definition at line 49 of file ad5933.h.

#### 4.2.1.21 #define NUM_SETTLE_CYCLES_MAX 511

Definition at line 53 of file ad5933.h.

#### 4.2.1.22 #define REG_CONTRO_NUM_BYTES 2

Definition at line 36 of file ad5933.h.

#### 4.2.1.23 #define REG_CONTROL 0x80

Definition at line 35 of file ad5933.h.

#### 4.2.1.24 #define REG_CONTROL_LSB 0x81

Definition at line 38 of file ad5933.h.

#### 4.2.1.25 #define REG_CONTROL_MSB REG_CONTROL

Definition at line 37 of file ad5933.h.

#### 4.2.1.26 #define REG_FREQ_INCR 0x85

Definition at line 44 of file ad5933.h.

#### 4.2.1.27 #define REG_FREQ_INCR_NUM_BYTES 3

Definition at line 45 of file ad5933.h.

#### 4.2.1.28 #define REG_IMAG 0x96

Definition at line 66 of file ad5933.h.

#### 4.2.1.29 #define REG_IMAG_LSB 0x97

Definition at line 69 of file ad5933.h.

#### 4.2.1.30 #define REG_IMAG_MSB REG_IMAG

Definition at line 68 of file ad5933.h.

#### 4.2.1.31 #define REG_IMAG_NUM_BYTES 2

Definition at line 67 of file ad5933.h.

#### 4.2.1.32 #define REG_NUM_INCR 0x88

Definition at line 47 of file ad5933.h.

#### 4.2.1.33 #define REG_NUM_INCR_NUM_BYTES 2

Definition at line 48 of file ad5933.h.

#### 4.2.1.34 #define REG_NUM_SETTLE_CYCLES 0x8A

Definition at line 51 of file ad5933.h.

#### 4.2.1.35 #define REG_NUM_SETTLE_CYCLES_NUM_BYTES 2

Definition at line 52 of file ad5933.h.

#### 4.2.1.36 #define REG_REAL 0x94

Definition at line 61 of file ad5933.h.

#### 4.2.1.37 #define REG_REAL_LSB 0x95

Definition at line 64 of file ad5933.h.

#### 4.2.1.38 #define REG_REAL_MSB REG_REAL

Definition at line 63 of file ad5933.h.

#### 4.2.1.39 #define REG_REAL_NUM_BYTES 2

Definition at line 62 of file ad5933.h.

#### 4.2.1.40 #define REG_START_FREQ 0x82

Definition at line 40 of file ad5933.h.

#### 4.2.1.41 #define REG_START_FREQ_NUM_BYTES 3

Definition at line 41 of file ad5933.h.

#### 4.2.1.42 #define REG_STATUS 0x8F

Definition at line 55 of file ad5933.h.

#### 4.2.1.43 #define REG_STATUS_NUM_BYTES 1

Definition at line 56 of file ad5933.h.

#### 4.2.1.44 #define REG_TEMP 0x92

Definition at line 58 of file ad5933.h.

#### 4.2.1.45 #define REG_TEMP_NUM_BYTES 2

Definition at line 59 of file ad5933.h.

#### 4.2.1.46 #define STATUS_SWEEP_COMPLETE 0x04

Definition at line 104 of file ad5933.h.

#### 4.2.1.47 #define STATUS_VALID_IMPEDANCE 0x02

Definition at line 103 of file ad5933.h.

#### 4.2.1.48 #define STATUS_VALID_TEMP 0x01

Definition at line 102 of file ad5933.h.

### 4.2.2 Typedef Documentation

#### 4.2.2.1 typedef struct ad5933_deviceConfig ad5933_deviceConfig

### 4.2.3 Function Documentation

#### 4.2.3.1 uint8_t ad5933_ConvertFreq ( ad5933_deviceConfig * *config,* uint32_t *desiredFreq,* uint8_t * *freqMsb,* uint8_t * *freqMid,* uint8_t * *freqLsb* )

Definition at line 65 of file ad5933.c.

#### 4.2.3.2 uint8_t ad5933_GetStatus ( ad5933_deviceConfig * *config,* uint8_t * *result* )

Definition at line 178 of file ad5933.c.

#### 4.2.3.3 uint8_t ad5933_IncrementFreq ( ad5933_deviceConfig * *config* )

Definition at line 391 of file ad5933.c.

#### 4.2.3.4 uint8_t ad5933_Init ( ad5933_deviceConfig * *config* )

#### 4.2.3.5 uint8_t ad5933_InitWithStartFreq ( ad5933_deviceConfig * *config* )

Definition at line 346 of file ad5933.c.

#### 4.2.3.6 uint8_t ad5933_MeasureTemp ( ad5933_deviceConfig * *config* )

Definition at line 437 of file ad5933.c.

#### 4.2.3.7 uint8_t ad5933_PerformFrequencySweep ( ad5933_deviceConfig * *config*, uint32_t *startFreq*, uint32_t *incrementFreq*, uint16_t *numOfIncrements*, uint16_t * *realArray*, uint16_t * *imagArray* )

Definition at line 32 of file ad5933.c.

#### 4.2.3.8 uint8_t ad5933_PowerDown ( ad5933_deviceConfig * *config* )

Definition at line 460 of file ad5933.c.

#### 4.2.3.9 uint8_t ad5933_ReadImagResult ( ad5933_deviceConfig * *config*, int16_t * *imag* )

Definition at line 316 of file ad5933.c.

#### 4.2.3.10 uint8_t ad5933_ReadRealResult ( ad5933_deviceConfig * *config*, int16_t * *real* )

Definition at line 288 of file ad5933.c.

#### 4.2.3.11 uint8_t ad5933_RepeatFreq ( ad5933_deviceConfig * *config* )

Definition at line 414 of file ad5933.c.

#### 4.2.3.12 uint8_t ad5933_SetIncrCount ( ad5933_deviceConfig * *config*, uint16_t *incrNum* )

Definition at line 136 of file ad5933.c.

#### 4.2.3.13 uint8_t ad5933_SetIncrFreq ( ad5933_deviceConfig * *config*, uint32_t *desiredFreq* )

Definition at line 110 of file ad5933.c.

#### 4.2.3.14 uint8_t ad5933_SetPGAx1 ( ad5933_deviceConfig * *config* )

Definition at line 525 of file ad5933.c.

#### 4.2.3.15 uint8_t ad5933_SetPGAx5 ( ad5933_deviceConfig * *config* )

Definition at line 547 of file ad5933.c.

#### 4.2.3.16 uint8_t ad5933_SetSettleTime ( ad5933_deviceConfig * *config,* uint16_t *cycles,* uint8_t *factor* )

Definition at line 157 of file ad5933.c.

#### 4.2.3.17 uint8_t ad5933_SetStartFreq ( ad5933_deviceConfig * *config,* uint32_t *desiredFreq* )

Definition at line 83 of file ad5933.c.

#### 4.2.3.18 uint8_t ad5933_SetVoutRange ( ad5933_deviceConfig * *config,* uint8_t *range* )

Definition at line 569 of file ad5933.c.

#### 4.2.3.19 uint8_t ad5933_Standby ( ad5933_deviceConfig * *config* )

Definition at line 482 of file ad5933.c.

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Definition at line 369 of file ad5933.c.

#### 4.2.3.21 uint8_t ad5933_Stop ( ad5933_deviceConfig * *config* )

Definition at line 504 of file ad5933.c.

#### 4.2.3.22 uint8_t ad9533_WaitForSweepComplete ( ad5933_deviceConfig * *config* )

Definition at line 233 of file ad5933.c.

#### 4.2.3.23 uint8_t ad9533_WaitForValidImpedance ( ad5933_deviceConfig * *config* )

Definition at line 211 of file ad5933.c.

#### 4.2.3.24 uint8_t ad9533_WaitForValidTemp ( ad5933_deviceConfig * *config* )

Definition at line 189 of file ad5933.c.

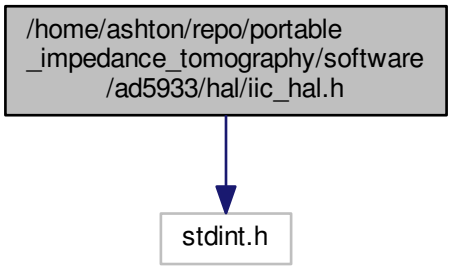
## 4.3 /home/ashton/repo/portable_impedance_tomography/software/ad5933/hal/arch/psoc_ble/i2c_hal.c File Reference

## 4.4 /home/ashton/repo/portable_impedance_tomography/software/ad5933/hal/arch/zynq_ps/i2c_hal.c File Reference

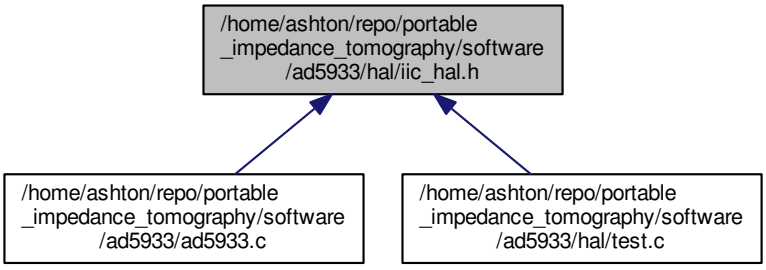
## 4.5 /home/ashton/repo/portable_impedance_tomography/software/ad5933/hal/iic_hal.h File Reference

```
#include "stdint.h"
```

Include dependency graph for iic_hal.h:




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




### Macros

- #define **IIC_OK** 0
- #define **IIC_ACK** 0
- #define **IIC_NACK** 1

### Typedefs

- typedef void **Iic_ConfigType**
- typedef void **Iic_ChannelType**
- typedef uint8_t **Iic_RegisterType**

### Functions

- void **Iic_Init** (const **Iic_ConfigType** ∗Config)
- uint8_t **Iic_RxByte** (const uint8_t addr, const uint8_t reg, uint8_t ∗rxValue)
- uint8_t **Iic_TxByte** (const uint8_t addr, const uint8_t reg, const uint8_t txValue)
- void **Iic_RegisterWrite** (**Iic_RegisterType** Register, uint32_t RegisterData)
- uint32_t **Iic_RegisterRead** (**Iic_RegisterType** Register)

## 4.5.1 Macro Definition Documentation

#### 4.5.1.1 #define IIC_ACK 0

Definition at line 35 of file iic_hal.h.

#### 4.5.1.2 #define IIC_NACK 1

Definition at line 36 of file iic_hal.h.

#### 4.5.1.3 #define IIC_OK 0

Definition at line 34 of file iic_hal.h.

## 4.5.2 Typedef Documentation

#### 4.5.2.1 typedef void Iic_ChannelType

Definition at line 39 of file iic_hal.h.

#### 4.5.2.2 typedef void Iic_ConfigType

Definition at line 38 of file iic_hal.h.

#### 4.5.2.3 typedef uint8_t Iic_RegisterType

Definition at line 40 of file iic_hal.h.

## 4.5.3 Function Documentation

#### 4.5.3.1 void Iic_Init ( const Iic_ConfigType ∗ *Config* )

Initialize the IIC Device

**Parameters**

| | |
|---|---|
| *Configuration* | data pointer which to initialize. |

Definition at line 3 of file test.c.

#### 4.5.3.2 uint32_t Iic_RegisterRead ( Iic_RegisterType *Register* )

Definition at line 37 of file test.c.

#### 4.5.3.3 void Iic_RegisterWrite ( Iic_RegisterType *Register,* uint32_t *RegisterData* )

Definition at line 33 of file test.c.

#### 4.5.3.4 uint8_t Iic_RxByte ( const uint8_t *addr,* const uint8_t *reg,* uint8_t * *rxValue* )

Receive a byte from the IIC device.

**Parameters**

| | |
|---|---|
| *7-bit* | device address to receive byte from |
| *8-bit* | register address to receive byte from |

**Returns**

0 if receive was ACK'ed, 1 if NACK'ed

Definition at line 13 of file test.c.

#### 4.5.3.5 uint8_t Iic_TxByte ( const uint8_t *addr,* const uint8_t *reg,* const uint8_t *txValue* )

Receive a byte from the IIC device.

**Parameters**

| | |
|---|---|
| *7-bit* | device address to transmit byte to |
| *8-bit* | register address to transmit byte to |

**Returns**

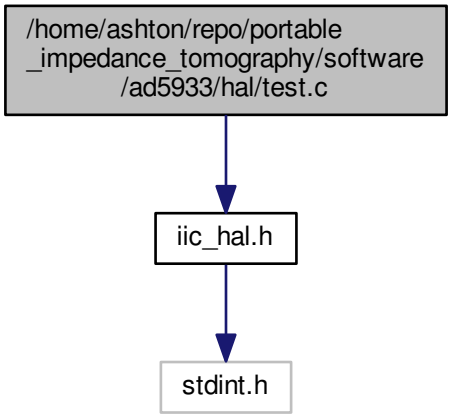
0 if receive was ACK'ed, 1 if NACK'ed

Definition at line 27 of file test.c.

## 4.6 /home/ashton/repo/portable_impedance_tomography/software/ad5933/hal/test.c File Reference

```
#include "iic_hal.h"
```

Include dependency graph for test.c:




### Functions

- void **Iic_Init** (const **Iic_ConfigType** *Config)
- uint8_t **Iic_RxByte** (const uint8_t addr, const uint8_t reg, uint8_t *rxValue)
- uint8_t **Iic_TxByte** (const uint8_t addr, const uint8_t reg, const uint8_t txValue)
- void **Iic_RegisterWrite** (**Iic_RegisterType** Register, uint32_t RegisterData)
- uint32_t **Iic_RegisterRead** (**Iic_RegisterType** Register)

### 4.6.1 Function Documentation

#### 4.6.1.1 void Iic_Init ( const Iic_ConfigType * *Config* )

Initialize the IIC Device

**Parameters**

| | |
|---|---|
| *Configuration* | data pointer which to initialize. |

Definition at line 3 of file test.c.

#### 4.6.1.2 uint32_t Iic_RegisterRead ( Iic_RegisterType *Register* )

Definition at line 37 of file test.c.

#### 4.6.1.3 void lic_RegisterWrite ( lic_RegisterType *Register,* uint32_t *RegisterData* )

Definition at line 33 of file test.c.

#### 4.6.1.4 uint8_t lic_RxByte ( const uint8_t *addr,* const uint8_t *reg,* uint8_t * *rxValue* )

Receive a byte from the IIC device.

**Parameters**

| | |
|---|---|
| *7-bit* | device address to receive byte from |
| *8-bit* | register address to receive byte from |

**Returns**

0 if receive was ACK'ed, 1 if NACK'ed

Definition at line 13 of file test.c.

#### 4.6.1.5 uint8_t lic_TxByte ( const uint8_t *addr,* const uint8_t *reg,* const uint8_t *txValue* )

Receive a byte from the IIC device.

**Parameters**

| | |
|---|---|
| *7-bit* | device address to transmit byte to |
| *8-bit* | register address to transmit byte to |

**Returns**

0 if receive was ACK'ed, 1 if NACK'ed

Definition at line 27 of file test.c.

# Index