

AC784xx_DFP ESM
6.1.0

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Chapter 1

Class Index

1.1 Class List

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

Esm_ConfigType	ESM module configuration structure	3
Esm_ErrorInfoType	Ecc error information structure	4

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

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Chapter 3

Class Documentation

3.1 Esm_ConfigType Struct Reference

ESM module configuration structure.

```
#include <Esm_Hal_Types.h>
```

Public Attributes

- uint32 [Irq_Src](#)
- Hal_CallbackType [Irq_1bitCallback](#)
- Hal_CallbackType [Irq_2bitCallback](#)

3.1.1 Detailed Description

ESM module configuration structure.

Definition at line 75 of file Esm_Hal_Types.h.

3.1.2 Member Data Documentation

3.1.2.1 Irq_1bitCallback

```
Hal_CallbackType Esm_ConfigType::Irq_1bitCallback
```

1bit ECC interrupt callback function.

Definition at line 78 of file Esm_Hal_Types.h.

3.1.2.2 Irq_2bitCallback

Hal_CallbackType Esm_ConfigType::Irq_2bitCallback

2bit ECC interrupt callback function.

Definition at line 79 of file Esm_Hal_Types.h.

3.1.2.3 Irq_Src

uint32 Esm_ConfigType::Irq_Src

ESM interrupt sources.

Definition at line 77 of file Esm_Hal_Types.h.

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

- [Esm_Hal_Types.h](#)

3.2 Esm_ErrorInfoType Struct Reference

Ecc error information structure.

```
#include <Esm_Hal_Types.h>
```

Public Attributes

- uint32 [Err_Status](#)
- uint32 [Err_Addr](#)

3.2.1 Detailed Description

Ecc error information structure.

Definition at line 85 of file Esm_Hal_Types.h.

3.2.2 Member Data Documentation

3.2.2.1 Err_Addr

uint32 Esm_ErrorInfoType::Err_Addr

Error address.

Definition at line 88 of file Esm_Hal_Types.h.

3.2.2.2 Err_Status

uint32 Esm_ErrorInfoType::Err_Status

Error Status, 1bit or 2bits ECC error.

Definition at line 87 of file Esm_Hal_Types.h.

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

- [Esm_Hal_Types.h](#)

Chapter 4

File Documentation

4.1 AC784xx_API_Reference_Manual_ESM.pdf File Reference

4.2 AC784xx_Esm_Reg.h File Reference

This file provides extern Low level Esm register api.

```
#include "Device_Register.h"
#include "Esm_Hal_Types.h"
```

Macros

- #define [ESM_CHANNEL_STATUS0](#)(ch) ((uint32 *) (ECC_SRAM_BASE + (uint32)(Esm_ChannelStatusOffset[ch])))
ESM channel status0 and status1 register address.
- #define [ESM_CHANNEL_STATUS1](#)(ch) ((uint32 *) (ECC_SRAM_BASE + (uint32)(Esm_ChannelStatusOffset[ch]) + 4U))

Functions

- LOCAL_INLINE uint32 [Esm_Reg_GetErrorStatus](#) (Esm_ChannelType Channel)
Get ESM error status.
- LOCAL_INLINE uint32 [Esm_Reg_GetInterruptStatus](#) (Esm_ChannelType Channel)
Get ECC interrupt status.
- LOCAL_INLINE uint32 [Esm_Reg_Get1bitErrorAddress](#) (Esm_ChannelType Channel)
Get Ecc 1bit error raw address.
- LOCAL_INLINE uint32 [Esm_Reg_Get2bitErrorAddress](#) (Esm_ChannelType Channel)
Get Ecc 2bit error raw address.
- LOCAL_INLINE void [Esm_Reg_SetInterruptSources](#) (uint32 IntSources)
Set ESM interrupt trigger sources.
- LOCAL_INLINE uint32 [Esm_Reg_GetInterruptSources](#) (void)
Get ESM interrupt trigger sources.
- LOCAL_INLINE void [Esm_Reg_ClearErrorInfo](#) (Esm_ChannelType Channel)
Clear ESM ecc error address and status information.

4.2.1 Detailed Description

This file provides extern Low level Esm register api.

4.2.2 Macro Definition Documentation

4.2.2.1 ESM_CHANNEL_STATUS0

```
#define ESM_CHANNEL_STATUS0(  
    ch ) ((uint32 *) (ECC_SRAM_BASE + (uint32) (Esm_ChannelStatusOffset [ch])))
```

ESM channel status0 and status1 register address.

Definition at line 82 of file AC784xx_Esm_Reg.h.

4.2.2.2 ESM_CHANNEL_STATUS1

```
#define ESM_CHANNEL_STATUS1(  
    ch ) ((uint32 *) (ECC_SRAM_BASE + (uint32) (Esm_ChannelStatusOffset [ch] ) + 4U))
```

Definition at line 83 of file AC784xx_Esm_Reg.h.

4.2.3 Function Documentation

4.2.3.1 Esm_Reg_ClearErrorInfo()

```
LOCAL_INLINE void Esm_Reg_ClearErrorInfo (  
    Esm_ChannelType Channel )
```

Clear ESM ecc error address and status information.

Note

Function ID: DES_ESM_API_106

Parameters

in	<i>Channel</i>	ESM Channel, See Esm_ChannelType definition.
----	----------------	--

Returns

void

Definition at line 168 of file AC784xx_Esm_Reg.h.

4.2.3.2 Esm_Reg_Get1bitErrorAddress()

```
LOCAL_INLINE uint32 Esm_Reg_Get1bitErrorAddress (
    Esm_ChannelType Channel )
```

Get Ecc 1bit error raw address.

Note

Function ID: DES_ESM_API_103

Parameters

in	<i>Channel</i>	ESM Channel, See Esm_ChannelType definition.
----	----------------	--

Returns

ECC 1 bit error address.

Definition at line 119 of file AC784xx_Esm_Reg.h.

4.2.3.3 Esm_Reg_Get2bitErrorAddress()

```
LOCAL_INLINE uint32 Esm_Reg_Get2bitErrorAddress (
    Esm_ChannelType Channel )
```

Get Ecc 2bit error raw address.

Note

Function ID: DES_ESM_API_104

Parameters

in	<i>Channel</i>	ESM Channel, See Esm_ChannelType definition.
----	----------------	--

Returns

ECC 2 bits error address.

Definition at line 133 of file AC784xx_Esm_Reg.h.

4.2.3.4 Esm_Reg_GetErrorStatus()

```
LOCAL_INLINE uint32 Esm_Reg_GetErrorStatus (
    Esm_ChannelType Channel )
```

Get ESM error status.

Note

Function ID: DES_ESM_API_101

Parameters

in	Channel	ESM Channel, See Esm_ChannelType definition.
----	---------	--

Returns

ECC error status.

Definition at line 92 of file AC784xx_Esm_Reg.h.

4.2.3.5 Esm_Reg_GetInterruptSources()

```
LOCAL_INLINE uint32 Esm_Reg_GetInterruptSources (
    void )
```

Get ESM interrupt trigger sources.

Note

Function ID: DES_ESM_API_111

Parameters

in	void	
----	------	--

Returns

Interrupt sources which can trigger ESM interrupt.

Definition at line 158 of file AC784xx_Esm_Reg.h.

4.2.3.6 Esm_Reg_GetInterruptStatus()

```
LOCAL_INLINE uint32 Esm_Reg_GetInterruptStatus (
    Esm_ChannelType Channel )
```

Get ECC interrupt status.

Note

Function ID: DES_ESM_API_102

Parameters

<i>in</i>	<i>Channel</i>	ESM Channel, See Esm_ChannelType definition.
-----------	----------------	--

Returns

ECC interrupt status.

Definition at line 105 of file AC784xx_Esm_Reg.h.

4.2.3.7 Esm_Reg_SetInterruptSources()

```
LOCAL_INLINE void Esm_Reg_SetInterruptSources (
    uint32 IntSources )
```

Set ESM interrupt trigger sources.

Note

Function ID: DES_ESM_API_105

Parameters

<i>in</i>	<i>IntSources</i>	Interrupt sources which can trigger ESM interrupt.
-----------	-------------------	--

Returns

void

Definition at line 147 of file AC784xx_Esm_Reg.h.

4.3 Esm_Hal.c File Reference

This file provides Hal Esm api.

```
#include "AC784xx_Esm_Reg.h"
#include "AC784xx_Eim_Reg.h"
#include "Esm_Hal.h"
```

Functions

- void [Esm_Hal_Init](#) (const [Esm_ConfigType](#) *ConfigPtr)
Initialize ESM module.
- void [Esm_Hal_DeInit](#) (void)
De-Initialize ESM module.
- Hal_StatusType [Esm_Hal_GetErrorInfo](#) (Esm_ChannelType Channel, [Esm_ErrorInfoType](#) *ErrorPtr)
Get current ESM error Information.
- void [Esm_Hal_ClearErrorInfo](#) (Esm_ChannelType Channel)
Clear ESM error information.

4.3.1 Detailed Description

This file provides Hal Esm api.

4.3.2 Function Documentation

4.3.2.1 Esm_Hal_ClearErrorInfo()

```
void Esm_Hal_ClearErrorInfo (
    Esm_ChannelType Channel )
```

Clear ESM error information.

Note

Function ID: DES_ESM_API_003

Parameters

in	void	
----	------	--

Returns

void

Definition at line 173 of file Esm_Hal.c.

4.3.2.2 Esm_Hal_DeInit()

```
void Esm_Hal_DeInit (
    void )
```

De-Initialize ESM module.

Note

Function ID: DES_ESM_API_004

Parameters

in	<i>ConfigPtr</i>	pointer of ESM driver configuration.
----	------------------	--------------------------------------

Returns

void

Definition at line 106 of file Esm_Hal.c.

4.3.2.3 Esm_Hal_GetErrorInfo()

```
Hal_StatusType Esm_Hal_GetErrorInfo (
    Esm_ChannelType Channel,
    Esm_ErrorInfoType * ErrorPtr )
```

Get current ESM error Information.

Note

Function ID: DES_ESM_API_002

Parameters

in	<i>Channel</i>	ESM channel.
out	<i>ErrorPtr</i>	Pointer to where to store the error information of ESM.

Returns

error status. -STATUS_SUCCESS: no error occurred. -STATUS_ERROR: error detected.

Definition at line 138 of file Esm_Hal.c.

4.3.2.4 Esm_Hal_Init()

```
void Esm_Hal_Init (
    const Esm_ConfigType * ConfigPtr )
```

Initialize ESM module.

Init ESM driver.

Note

Function ID: DES_ESM_API_001

Parameters

in	<i>ConfigPtr</i>	pointer of ESM driver configuration.
----	------------------	--------------------------------------

Returns

void

Definition at line 76 of file Esm_Hal.c.

4.4 Esm_Hal.h File Reference

This file provides extern Hal Esm api.

```
#include "Esm_Hal_Types.h"
```

Functions

- void [Esm_Hal_Init](#) (const [Esm_ConfigType](#) *ConfigPtr)
Init ESM driver.
- void [Esm_Hal_DeInit](#) (void)
De-Initialize ESM module.
- Hal_StatusType [Esm_Hal_GetErrorInfo](#) (Esm_ChannelType Channel, [Esm_ErrorInfoType](#) *ErrorPtr)
Get current ESM error Information.
- void [Esm_Hal_ClearErrorInfo](#) (Esm_ChannelType Channel)
Clear ESM error information.

4.4.1 Detailed Description

This file provides extern Hal Esm api.

4.4.2 Function Documentation

4.4.2.1 Esm_Hal_ClearErrorInfo()

```
void Esm_Hal_ClearErrorInfo (
    Esm_ChannelType Channel )
```

Clear ESM error information.

Note

Function ID: DES_ESM_API_003

Parameters

in	void	
----	------	--

Returns

void

Definition at line 173 of file Esm_Hal.c.

4.4.2.2 Esm_Hal_DeInit()

```
void Esm_Hal_DeInit (  
    void )
```

De-Initialize ESM module.

Note

Function ID: DES_ESM_API_004

Parameters

in	ConfigPtr	pointer of ESM driver configuration.
----	-----------	--------------------------------------

Returns

void

Definition at line 106 of file Esm_Hal.c.

4.4.2.3 Esm_Hal_GetErrorInfo()

```
Hal_StatusType Esm_Hal_GetErrorInfo (  
    Esm_ChannelType Channel,  
    Esm_ErrorInfoType * ErrorPtr )
```

Get current ESM error Information.

Note

Function ID: DES_ESM_API_002

Parameters

in	Channel	ESM channel.
in, out	None	
out	ErrorPtr	Pointer to where to store the error information of ESM.

Returns

error status. -STATUS_SUCCESS: no error occurred. -STATUS_ERROR: error detected.

Note

Function ID: DES_ESM_API_002

Parameters

in	<i>Channel</i>	ESM channel.
out	<i>ErrorPtr</i>	Pointer to where to store the error information of ESM.

Returns

error status. -STATUS_SUCCESS: no error occurred. -STATUS_ERROR: error detected.

Definition at line 138 of file Esm_Hal.c.

4.4.2.4 Esm_Hal_Init()

```
void Esm_Hal_Init (
    const Esm_ConfigType * ConfigPtr )
```

Init ESM driver.

Note

Function ID: DES_ESM_API_001

Parameters

in	<i>ConfigPtr</i>	pointer of ESM driver configuration.
----	------------------	--------------------------------------

Returns

void

Init ESM driver.

Note

Function ID: DES_ESM_API_001

Parameters

in	<i>ConfigPtr</i>	pointer of ESM driver configuration.
----	------------------	--------------------------------------

Returns

void

Definition at line 76 of file Esm_Hal.c.

4.5 Esm_Hal_Types.h File Reference

This file provides Esm hal types header.

```
#include "Device_Register.h"
```

Classes

- struct [Esm_ConfigType](#)
ESM module configuration structure.
- struct [Esm_ErrorInfoType](#)
Ecc error information structure.

Enumerations

- enum { [ESM_NO_ERR](#), [ESM_1BIT_ERR](#), [ESM_2BIT_ERR](#), [ESM_BOTH_ERR](#) }
ESM interrupt status type.

4.5.1 Detailed Description

This file provides Esm hal types header.

4.5.2 Enumeration Type Documentation

4.5.2.1 anonymous enum

anonymous enum

ESM interrupt status type.

Enumerator

ESM_NO_ERR	no error.
ESM_1BIT_ERR	1bit ecc error.
ESM_2BIT_ERR	2bit ecc error.
ESM_BOTH_ERR	1bit and 2bit ecc error.

Definition at line 63 of file Esm_Hal_Types.h.

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