

Seagull PMC

DSP API Guide

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Seagull PMC

1 Symbol Reference

Files

| File | Description |
|----------------------------------|--|
| Seagull_PMCExp.h (↗ see page 14) | Seagull_PMC library exported header file |

Functions

| Function | Description |
|--|--|
| Seagull_PMC_Get_Version (↗ see page 6) | Get version for this library |
| Seagull_PMC_Open (↗ see page 7) | Opens Seagull_PMC_handle_t (↗ see page 12) |

Types

| Type | Description |
|---|---|
| Seagull_PMC_attrs_t (↗ see page 9) | typedef of struct Seagull_PMC_attrs_s (↗ see page 3) |
| Seagull_PMC_FXN_close (↗ see page 10) | Close Seagull_PMC_handle_t (↗ see page 12) |
| Seagull_PMC_FXN_load_fpga (↗ see page 11) | Loads the FPGA |
| Seagull_PMC_handle_t (↗ see page 12) | typedef of struct Seagull_PMC_handle_s (↗ see page 4) |

Structs, Records, Enums

| Struct, Record, Enum | Description |
|-------------------------------------|--|
| Seagull_PMC_attrs_s (↗ see page 3) | structure for initializing Seagull_PMC for Seagull_PMC_Open (↗ see page 7) |
| Seagull_PMC_handle_s (↗ see page 4) | structure for using the Seagull_PMC |

1.1 Structs, Records, Enums

Structs

| Struct | Description |
|-------------------------------------|--|
| Seagull_PMC_attr_s (↗ see page 3) | structure for initializing Seagull_PMC for Seagull_PMC_Open (↗ see page 7) |
| Seagull_PMC_handle_s (↗ see page 4) | structure for using the Seagull_PMC |

1.1.1 Seagull_PMC_attrs_s

```
struct Seagull_PMC_attrs_s {  
    int open_gpio;  
};
```

File

Seagull_PMCExp.h (see page 14)

Description

structure for initializing Seagull_PMC for Seagull_PMC_Open (see page 7)

1.1.2 Seagull_PMC_handle_s

```
struct Seagull_PMC_handle_s {
    Seagull_PMC_FXN_close close;
    Seagull_PMC_FXN_load_fpga load_fpga;
    GPIO_Handle gpio_handle;
    int loads_fpga;
};
```

File

Seagull_PMCExp.h (see page 14)

Members

| Members | Description |
|--------------------------|-----------------------------------|
| GPIO_Handle gpio_handle; | GPIO handle opened by lib |
| int loads_fpga; | whether this DSP can load an FPGA |

Description

structure for using the Seagull_PMC

1.2 Functions

Functions

| Function | Description |
|--|--|
| Seagull_PMC_Get_Version (↗ see page 6) | Get version for this library |
| Seagull_PMC_Open (↗ see page 7) | Opens Seagull_PMC_handle_t (↗ see page 12) |

1.2.1 Seagull_PMC_Get_Version

Get version for this library

```
MANGOERROR_error_t Seagull_PMC_Get_Version(MANGOBIOSt * version);
```

File

Seagull_PMCExp.h (see page 14)

Returns

Status

Return Values

| Return Values | Description |
|--------------------|-------------|
| MANGOERROR_SUCCESS | Success |

Description

Gets version information for Seagull_PMC Library

Remarks

None

Example

```
int errorCode;
MANGOBIOSt version;

errorCode = Seagull_PMC_Get_Version(
    &version
);
```


1.2.2 Seagull_PMC_Open

Opens Seagull_PMC_handle_t (see page 12)

```
MANGOERROR_error_t Seagull_PMC_Open(Seagull_PMC_handle_t * handle, const
Seagull_PMC_attrs_t * attrs);
```

File

Seagull_PMCExp.h (see page 14)

Parameters

| Parameters | Description |
|-----------------------------------|--------------------|
| Seagull_PMC_handle_t * handle | Pointer for handle |
| const Seagull_PMC_attrs_t * attrs | Pointer to attrs |

Returns

Status

Return Values

| Return Values | Description |
|---------------------------------|--|
| MANGOERROR_SUCCESS | Success |
| MANGOERROR_RESOURCE_UNAVAILABLE | - Seagull_PMC_Open has already been called (handle already open). - attrs->open_gpio is true, but the call to GPIO_open for GPIO_DEV0 fails |

Description

Initializes handle for using a Seagull_PMC board. This function will fail if called more than once without a call to handle.close() in between.

Remarks

If attrs.open_gpio is true, then the gpio will be reset and opened. The GPIO_Handle is stored in the Seagull_PMC_handle_t (see page 12) structure, and can be copied from there for use by the application. GPIO must be opened by this function to enable load FPGA.

After returning from this function, sgl_pmc.loads_fpga will contain 1 if loading FPGA is possible from this DSP or 0 if not. DSP 1 should return 1 and DSPs 2, 3, 4 should return 0.

Example

```
Seagull_PMC_handle_t sgl_pmc;
Seagull_PMC_attrs_t attrs;
int errorCode;
attrs.open_gpio = 1;
errorCode = Seagull_PMC_Open(
    &sgl_pmc,
    &attrs
);
```

1.3 Types

Types

| Type | Description |
|---|---|
| Seagull_PMC_attr_t (↗ see page 9) | typedef of struct Seagull_PMC_attr_s (↗ see page 3) |
| Seagull_PMC_FXN_close (↗ see page 10) | Close Seagull_PMC_handle_t (↗ see page 12) |
| Seagull_PMC_FXN_load_fpga (↗ see page 11) | Loads the FPGA |
| Seagull_PMC_handle_t (↗ see page 12) | typedef of struct Seagull_PMC_handle_s (↗ see page 4) |

1.3.1 Seagull_PMC_attrs_t

```
typedef struct Seagull_PMC_attrs_s Seagull_PMC_attrs_t;
```

File

Seagull_PMCExp.h (↗ see page 14)

Description

typedef of struct Seagull_PMC_attrs_s (↗ see page 3)

1.3.2 Seagull_PMC_FXN_close

Close Seagull_PMC_handle_t (↗ see page 12)

```
typedef MANGOERROR_error_t (* Seagull_PMC_FXN_close)();
```

File

Seagull_PMCExp.h (↗ see page 14)

Returns

Status

Return Values

| Return Values | Description |
|----------------------------------|---|
| MANGOERROR_SUCCESS | Success |
| MANGOERROR_ERR_INVALID_PARAMETER | Seagull_PMC library was not previously opened successfully. |

Description

Closes library. The library can be reopened using Seagull_PMC_Open (↗ see page 7)()

Remarks

None

Example

```
int errorCode;
errorCode = sgl_pmc.close(
);
```

1.3.3 Seagull_PMC_FXN_load_fpga

Loads the FPGA

```
typedef MANGOERROR_error_t (* Seagull_PMC_FXN_load_fpga)(const unsigned char * fpga_config,
unsigned int size);
```

File

Seagull_PMCExp.h (see page 14)

Parameters

| Parameters | Description |
|-------------|------------------------------------|
| fpga_config | Pointer to char array of FPGA data |
| size | Number of bytes of FPGA data |

Returns

Status

Return Values

| Return Values | Description |
|-------------------------------|---|
| MANGOERROR_SUCCESS | Success |
| MANGOERROR_ERR_INVALID_HANDLE | Seagull_PMC library has not been opened successfully. |
| MANGOERROR_TIMEOUT | FPGA is not responding with appropriate pin response. |

Description

Resets, and loads the FPGA.

Remarks

None.

Example

```
const unsigned char fpga_data[] = {
#include "top.ttf"
};

int fpga_size = sizeof(fpga_data);
int errorCode;
errorCode = sgl_pmc->load_fpga(
    fpga_data,
    fpga_size
);
```

1.3.4 Seagull_PMC_handle_t

```
typedef struct Seagull_PMC_handle_s Seagull_PMC_handle_t;
```

File

Seagull_PMCExp.h (see page 14)

Description

typedef of struct Seagull_PMC_handle_s (see page 4)

1.4 Files

Files

| File | Description |
|---|--|
| Seagull_PMCExp.h (↗ see page 14) | Seagull_PMC library exported header file |

1.4.1 Seagull_PMCExp.h

Seagull_PMC library exported header file

Description

Seagull_PMC library exported api declarations

Remarks

Requires <csl_gpio.h>, "MangoError.h", "MangoBios.h"

History

| Author | Change Description |
|-----------------|--------------------|
| Nachum Kanovsky | Created |

Functions

| Function | Description |
|--|--|
| Seagull_PMC_Get_Version (↗ see page 6) | Get version for this library |
| Seagull_PMC_Open (↗ see page 7) | Opens Seagull_PMC_handle_t (↗ see page 12) |

Structs

| Struct | Description |
|-------------------------------------|--|
| Seagull_PMC_attrs_s (↗ see page 3) | structure for initializing Seagull_PMC for Seagull_PMC_Open (↗ see page 7) |
| Seagull_PMC_handle_s (↗ see page 4) | structure for using the Seagull_PMC |

Types

| Type | Description |
|---|---|
| Seagull_PMC_attrs_t (↗ see page 9) | typedef of struct Seagull_PMC_attrs_s (↗ see page 3) |
| Seagull_PMC_FXN_close (↗ see page 10) | Close Seagull_PMC_handle_t (↗ see page 12) |
| Seagull_PMC_FXN_load_fpga (↗ see page 11) | Loads the FPGA |
| Seagull_PMC_handle_t (↗ see page 12) | typedef of struct Seagull_PMC_handle_s (↗ see page 4) |

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