lib_otpinfo: OTP reading library

XMOS

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1   Introduction

`lib_otpinfo` provides functions for reading data from the one-time programmable (OTP) memory of an xCORE device. Specifically, the provided functions enable reading the serial number, board identifier, and Ethernet MAC addresses, if programmed into the OTP memory. It links against the OTP library included in he XMOS tools and calls its functions to read from OTP memory. This library is for use with *xcore-200* series (XS2 architecture) or *xcore.ai* series (XS3 architecture) devices only, previous generations of *xcore* devices (i.e. XS1 architecture) are not supported.

2   Usage

`lib_otpinfo` is intended to be used with the XCommon CMake , the *XMOS* application build and dependency management system.

To use this library, include **lib_otpinfo** in the application's `APP_DEPENDENT_MODULES` list, for example:

```
set(APP_DEPENDENT_MODULES "lib_otpinfo")
```

Applications should then include the `otp_board_info.h` header file:

```
#include "otp_board_info.h"
```

The ports used by OTP memory are the same on every tile. They need to be declared with the OTPPorts type:

```
on tile[0]: OTPPorts otp_ports = OTP_PORTS_INITIALIZER;
```

Where `OTP_PORTS_INITIALIZER` is the standard initialiser for the `OTPPorts` structure and is defined in XMOS Tools `lib_otp`.

3   API

The following functions can then be used to obtain information from the OTP that has been set via XBURN:

int **otp_board_info_get_mac**(REFERENCE_PARAM(OTPPorts, ports), unsigned index, char mac[6])

    Read a MAC address from the board information written at the end of the OTP memory.

        Parameters

- ▶ **ports** – Ports used to access the OTP memory.
- ▶ **index** – Index of the MAC address to retrieve.
- ▶ **mac** – Array to write the MAC address to.

        Returns

        Returns 1 on finding a mac address at index 'index', 0 if no mac address present

int **`otp_board_info_get_serial`**(REFERENCE_PARAM(OTPPorts, ports),
                                      REFERENCE_PARAM(unsigned, value))

Read a serial number from the board information written at the end of the OTP memory.

Parameters

- ▶ **`ports`** – Ports used to access the OTP memory.
- ▶ **`value`** – Variable to store the serial number to.

Returns

Returns 1 if serial number present in the OTP memory, 0 if no serial number found.

int **`otp_board_info_get_board_identifier`**(REFERENCE_PARAM(OTPPorts,
                                                ports),
                                                REFERENCE_PARAM(unsigned,
                                                value))

Read the board identifier from the board information written at the end of the OTP memory.

Parameters

- ▶ **`ports`** – Ports used to access the OTP memory.
- ▶ **`value`** – Variable to store the board identifier to.

Returns

Returns 1 if bitmap present in the OTP memory, 0 if no serial number found.

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