MT793X IoT SDK for PMU User Guide

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Version History

Version	Date	Description
1.0	2021-08-01	Initial release

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1   Overview

The PMU (Power Management Unit) controller mainly controls the voltage output from the PMU, which generates regulated power for the chip. Refer to 錯誤! 找不到參照來源。 for the detailed information.
In the MT793X, the PMU controller can control BUCKD and MLDO to regulate voltages by requirement. There are two scenarios for voltage change events --- Normal mode voltage change and low power mode voltage change.
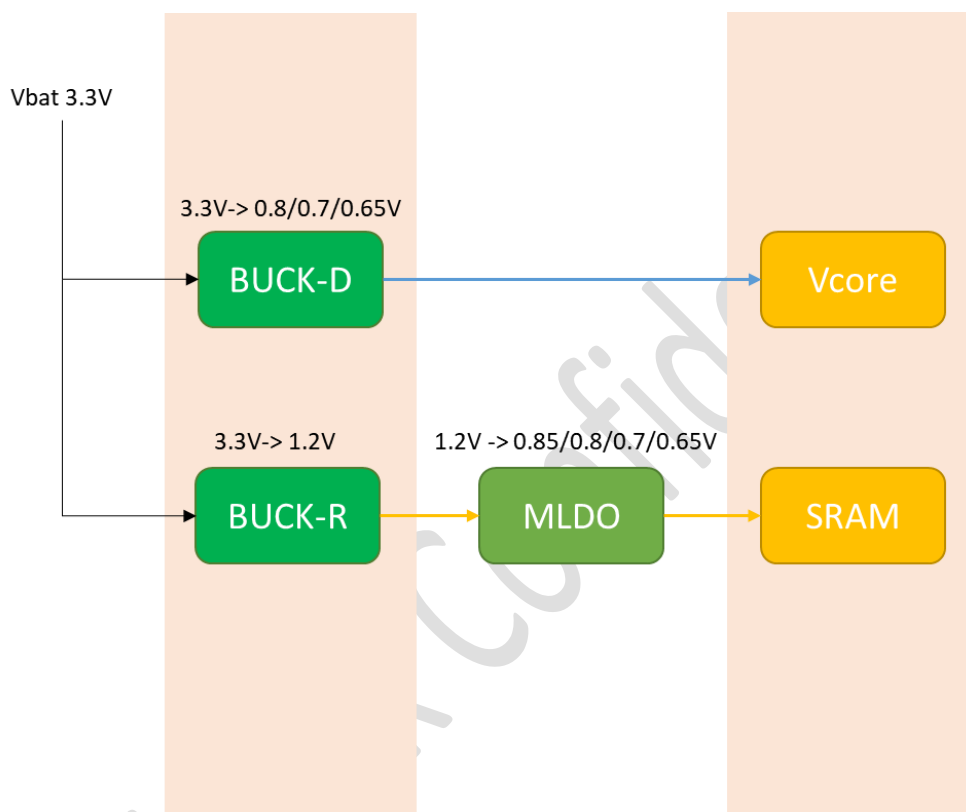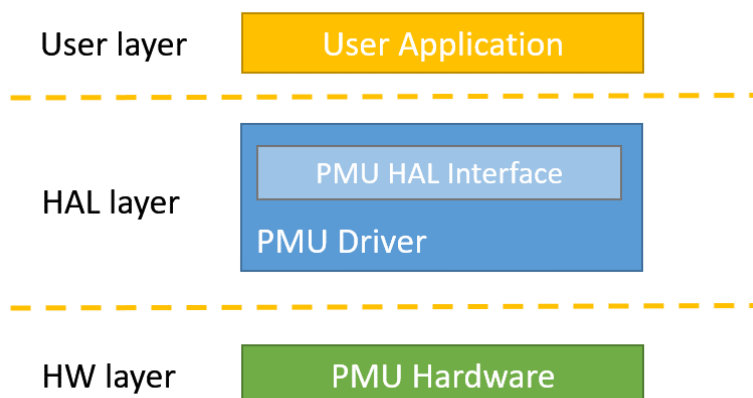

Figure 1-1 Power Grid

2 Driver Introduction

2.1 Driver Architecture

2.2 Driver API Reference

API	Description
hal_pmu_init(void)	This function initializes the PMU.
hal_pmu_set_vcore_voltage(hal_pmu_vcore_vosel_t vol)	This function sets vcore power to specific voltage.
hal_pmu_set_mldo_voltage(hal_pmu_mldo_vosel_t vol)	This function sets mldo power to specific voltage.

2.2.1 Enumeration Type Definition

The hal_pmu_vcore_vosel_t defines the output voltage of vcore.

```
enum   hal_pmu_vcore_vosel_t {
         HAL_PMU_VCORE_0p65V = 0,
         HAL_PMU_VCORE_0p7V,
         HAL_PMU_VCORE_0p8V
       }
```

Enumerator	
HAL_PMU_VCORE_0p65V	vcore 0.65V
HAL_PMU_VCORE_0p7V	vcore 0.7V
HAL_PMU_VCORE_0p8V	vcore 0.8V

The hal_pmu_mldo_vosel_t defines the output voltage of mldo.

```
enum   hal_pmu_mldo_vosel_t {
         HAL_PMU_MLDO_0p65V = 0,
         HAL_PMU_MLDO_0p7V,
         HAL_PMU_MLDO_0p8V,
         HAL_PMU_MLDO_0p85V
       }
```

Enumerator	
HAL_PMU_MLDO_0p65V	vcore 0.65V
HAL_PMU_MLDO_0p7V	vcore 0.7V
HAL_PMU_MLDO_0p8V	vcore 0.8V
HAL_PMU_MLDO_0p85V	vcore 0.85V

2.3   Sample Code

---

hal_pmu_status_t hal_pmu_init (void   )

PMU init function.

Returns

To indicate whether this function call is successful or not.

HAL_PMU_STATUS_OK, if the operation completed successfully.

HAL_PMU_STATUS_ERROR, if the operation failed.

Example

```
1      // initial
2  hal_pmu_init();
```

---

hal_pmu_status_t hal_pmu_set_mldo_voltage (hal_pmu_mldo_vosel_t vol)

This function sets mldo power to the specific voltage.

Parameters

[in] **vol** specified mldo voltage.

Returns

To indicate whether this function call is successful or not.

HAL_PMU_STATUS_OK, if the operation completed successfully.

HAL_PMU_STATUS_ERROR, if the operation failed.

Example

```
1  // set mldo to 0.7V
2   hal_pmu_set_mldo_voltage(HAL_PMU_MLDO_0p7V);
```

---

hal_pmu_status_t hal_pmu_set_vcore_voltage (hal_pmu_vcore_vosel_t vol)

This function sets vcore power to the specific voltage.

Parameters

[in] **vol** specified vcore voltage.

Returns

To indicate whether this function call is successful or not.

HAL_PMU_STATUS_OK, if the operation completed successfully.

HAL_PMU_STATUS_ERROR, if the operation failed.

Example

```
1  // set vcore to 0.7V
2   hal_pmu_set_vcore_voltage(HAL_PMU_VCORE_0p7V);
```

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