

Application Note

DA9210 Linux Mainline Device Driver

AN-SW-101

Abstract

Description of build and loading instructions, and a list of features provided by the DA9210 Linux Mainline device driver.

DA9210 Linux Mainline Device Driver

Terms and Definitions

I ² C	Inter-Integrated Circuit (bus)
IRQ	Interrupt Request (line)

References

- [1] DA9210, Datasheet, Dialog Semiconductor.

Introduction

The purpose of this document is to describe the release of the DA9210 PMIC Linux Mainline device driver package. It will cover the following:

- build and loading instructions and;
- a description of the features provided by this driver.

These instructions cover the device driver content and the device tree data where appropriate. It is expected that anyone reading this document has a good understanding of Linux and the Linux kernel.

Dependencies

This release depends upon a clean, correctly compiled and working Linux kernel linux-stable tree, tag v3.12 or later. This Linux kernel is not provided by Dialog Semiconductor. The kernel is provided by The Linux Kernel Archives (<https://www.kernel.org/>). The tag v3.12 (or later) can be checked out from the Linux kernel linux-stable repository.

System Requirements

- Linux kernel source from the repository linux-stable, tagged as v3.12 or later.
- Dialog Semiconductor DA9210.

Features

The following features are supported by the DA9210 PMIC Linux device driver.

- Platform data support for the device
- Device tree support for the device
- I²C communication support
- IRQ support
- Bucks
 - Activate and deactivate regulator (on/off)
 - Specify voltage settings for buck
 - Define the current limits for buck

Installation

All DA9210 device driver sources come as part of the Linux kernel. In addition to this, further steps are required to fully integrate the device driver into the kernel tree.

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- Information to add devices into the host platform.
- Configuration of the Linux build system.

Device Tree Bindings

Add bindings for the DA9210 into the device tree schema for the target platform. The DA9210 device driver uses common frameworks and interfaces exported by the Linux kernel. The support for device tree and DA9210 bindings can be found in the kernel documentation.

```
./Documentation/devicetree/bindings/regulator/da9210.txt
```

Platform Data

Update machine code in arch/arm/mach-<machine> to add platform specific code for the DA9210 driver.

Compilation

The instructions are provided in the kernel source tree. For further instructions, see the top level README file in the Linux kernel.

Interfaces

Device Driver Interface

This section describes the interfaces supported by the DA9210 PMIC driver.

- I²C: The driver supports the I²C interface for control of the device.
- Sysfs Interface: The driver natively supports the kernel's sysfs framework. Each component provides a set of file access points under the kernel directory /sys.

Device Tree Interface

The support for device tree can be found in the Linux kernel binding documentation. DT bindings for the DA9210 are given in the device tree specification files.

Revision History

Revision	Date	Description
000	22-Nov-2013	Initial Application Note
1v0	10-Aug-2016	New format document. Additions for IRQ support. Additions for device tree support.

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Status Definitions

Status	Definition
DRAFT	The content of this document is under review and subject to formal approval, which may result in modifications or additions.
APPROVED or unmarked	The content of this document has been approved for publication.

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