



SIM8905 Series Smart Module UART Configure Guide

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About Document

Document Information

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Related Documents

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1 Purpose of this document

The purpose of UART is used to transmit and receive data through serial interface, which is mainly used to communicate with other UART protocol terminals. This document describes how to configure it UART for SIM8905 series smart module.

2 UART Configure Process

2.1 Dts Configure

The convenient way to add a new UART is mainly to modify the DTS file and driver file, without changing the driver system. SIM8905 series module can support 2 UARTs. They are identified as follows:

UART Physical address

BLSP Hardware ID	UART core	UART_DM_BASE_ADDRESS
BLSP1	BLSP1 UART1	0x78AF000
BLSP1	BLSP1 UART2	0x78B0000

UART IRQ List

BLSP Hardware ID	UART core	IRQ #
BLSP1	BLSP1 UART1	107
BLSP1	BLSP1 UART2	108

The file for configuration is as follows:

```
/kernel/arch/arm/boot/dts/qcom/msm8909.dtsi
```

Low speed UART configure:

Low-speed UART is a FIFO-based UART driver designed for small data transfer at a slow rate, such as console debugging or IrDA transfer. By default, BLSP1 UART2 Base 0x78B0000 is preconfigured as low-speed UART. For example:

```
blsp1_uart1: serial@78af000 {
    compatible = "qcom,msm-lsuart-v14";
    reg = <0x78af000 0x200>;
    interrupts = <0 107 0>;
    status = "ok";
    clocks = <&clock_gcc clk_gcc_blsp1_uart1_apps_clk>,
            <&clock_gcc clk_gcc_blsp1_ahb_clk>;
    clock-names = "core_clk", "iface_clk";
```

```
};
```

High speed UART configure:

If you want to transmit large amounts of data or high-speed transmission, such as Bluetooth communication, you can use high-speed UART driver. For example:

```
blsp1_uart2: serial@78b0000 {
    compatible = "qcom,msm-hsuart-v14";
    reg = <0x78b0000 0x200>,
        <0x7884000 0x23000>;
    reg-names = "core_mem", "bam_mem";
    interrupt-names = "core_irq", "bam_irq", "wakeup_irq";
    #address-cells = <0>;
    interrupt-parent = <&blsp1_uart2>;
    interrupts = <0 1 2>;
    #interrupt-cells = <1>;
    interrupt-map-mask = <0xffffffff>;
    interrupt-map = <0 &intc 0 108 0
        1 &intc 0 238 0
        2 &msm_gpio 21 0>;
    qcom,inject-rx-on-wakeup;
    qcom,rx-char-to-inject = <0xFD>;
    qcom,bam-tx-ep-pipe-index = <2>;
    qcom,bam-rx-ep-pipe-index = <3>;
    qcom,master-id = <86>;
    clock-names = "core_clk", "iface_clk";
    clocks = <&clock_gcc clk_gcc_blsp1_uart2_apps_clk>,
        <&clock_gcc clk_gcc_blsp1_ahb_clk>;
    pinctrl-names = "default", "sleep";
    pinctrl-0 = <&hsuart2_active>;
    pinctrl-1 = <&hsuart2_sleep>;
    qcom,msm-bus,name = "blsp1_uart2";
    qcom,msm-bus,num-cases = <2>;
    qcom,msm-bus,num-paths = <1>;
    qcom,msm-bus,vectors-KBps =
        <86 512 0 0>,
        <86 512 500 800>;
    status = "ok";
};
```

2.2 Configure UART GPIO

The file for configuration UART GPIO is as :

kernel/arch/arm/boot/dts/qcom/msm8909-pinctrl.dtsi

Low speed UART configure

For example:

```
uart_ls1 {
    qcom,pins = <&gp 4>, <&gp 5>;
    qcom,num-grp-pins = <2>;
    qcom,pin-func = <2>;
    label = "uart-ls1";
    uart_ls1: default {
        drive-strength = <16>;
        bias-pull-down;
    };
};
```

High speed UART configure:

For example:

```
hsuart2_active{
    qcom,pins = <&gp 20>, <&gp 21>;
    qcom,num-grp-pins = <2>;
    qcom,pin-func = <3>;
    label = "uart-console";
    hsuart2_active: uart-console {
        drive-strength = <2>;
        bias-pull-down;
    };
};

hsuart2_sleep{
    qcom,pins = <&gp 111>,<&gp 112>;
    qcom,num-grp-pins = <2>;
    qcom,pin-func = <3>;
    label = "uart-console";
    hsuart2_sleep: uart-console {
        drive-strength = <2>;
        bias-pull-down;
    };
};
```

2.3 Enable UART for debugging

File to modify:

Project_Root/bootable/bootloader/lk/project/msm8909.mk

Set the flag, WITH_DEBUG_UART, to TRUE:

DEFINES += WITH_DEBUG_UART=1

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