

# How to check rtc\_alarm wakeup in kmsg

## Applicable platform:

MSM8953/MSM8952/MSM8996/MSM8998/SDM660/SDM630/SDM450/generic

## Issue/problem description:

Usually, If below debug\_mask is enabled, you will see "qnpn\_rtc\_alarm" print in kmsg when an alarm is triggered.

```
echo 1 > /sys/module/msm_show_resume_irq/parameters/debug_mask
```

```
<4>[ 350.215301] gic_show_resume_irq: 200 triggered qcom,smd-rpm
```

```
<4>[ 350.215301] gic_show_resume_irq: 203 triggered 681b8.qcom,mpm
```

```
<4>[ 350.215301] gic_show_resume_irq: 358 triggered 400f000.qcom,spmi
```

```
<4>[ 350.215301] __qnpnrint_handle_irq: 186 triggered [0x0, 0x61, 0x1] qnpn_rtc_alarm
```

However, In new qualcomm platform(8952/8976/8953...), you cannot find out the log in dmesg any more though it is caused by alarm triggered.

## Issue Analysis:

Because Linux alarm framework doesn't use qnpn\_RTC device to wakeup AP and not register the alarm to qnpn\_RTC driver.

Instead of it, the alarm timer will be written to MPM directly before AP power collapse. Therefore, you can only see "smd-rpm" and "qcom,mpm" print logs as below, and no qnpn\_rtc\_alarm any more.

```
[ 177.890131] gic_show_resume_irq: 200 triggered qcom,smd-rpm
```

```
[ 177.890131] gic_show_resume_irq: 203 triggered 601d0.qcom,mpm
```

```
.....
```

```
[ 201.387648] gic_show_resume_irq: 200 triggered qcom,smd-rpm
```

```
[ 201.387648] gic_show_resume_irq: 203 triggered 601d0.qcom,mpm
```

Here is the source code, if "**poweron\_alarm**" is **TRUE**, then the **qnpn\_rtc driver will not be used**. so you could disable power alarm feature and then can see RTC interrupts during suspend exiting.

```
echo 0 > /sys/module/qnpn_rtc/parameters/poweron_alarm
```

kernel\kernel\time\alarmtimer.c

```
static int alarmtimer_suspend(struct device *dev)
```

```
{
```

```
.....
```

```
if (poweron_alarm) {
```

```
struct rtc_time tm_val;
```

```
unsigned long secs;
```

```
tm_val = rtc_ktime_to_tm(min);
```

```
rtc_tm_to_time(&tm_val, &secs);
```

```
lpm_suspend_wake_time(secs);
```

```
} else {
```

```
/* Set alarm, if in the past reject suspend briefly to handle */
```

```
ret = rtc_timer_start(rtc, &rtctimer, now, ktime_set(0, 0));
```

```
if (ret < 0)
```

```
__pm_wakeup_event(ws, MSEC_PER_SEC);
```

```
}
```

```
.....
```

```
}
```

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2019-11-26 02:47:13 PST  
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