Google Groups

## Re: [beagleboard] Re: modprobe rtc-ds3231 returns module not found?

**smith.wi...@gmail.com**                                         Oct 31, 2013 6:31 AM
Posted in group: **BeagleBoard**

On Thursday, October 31, 2013 7:49:27 AM UTC-4, Will Kostelecky wrote:
> It's on i2c-1.   The frustrating thing is that the HW works with another image that I built a while
> ago.  I am now trying to build a clean new image (post all my development messing around)
> and it is not working with the new build.   I am pretty sure I did not have to do anything other
> than what I am doing now but obviously I have missed something in the new build.

Newer builds require the use of a device tree overlay to ensure the hardware you need is
available, in older builds, you had to rebuild the kernel if what you wanted wasn't available.
 Although recent builds have had the dto support, I have found various issues here and there.

So i2c-1 is the enumeration linux gave one of the i2c buses and does not necessarily
correspond to the i2c pins you are using.  The BBB has two usable i2c devices [1], as follows:

- i2c0: Not exposed in the expansion headers
- i2c1: pins P9 17,18 (and 24,26)
- i2c2: pins P9 19,20 (and 21,22)

The i2c devices appear in the AM335x memory map [2] at the following locations:

- i2c0: 0x44E0_B000
- i2c1: 0x4802_A000
- i2c2: 0x4819_C000

Linux creates mappings in the /sys/bus/i2c/devices pseudo-filesystem that indicates the
mappings from the i2c-* devices to the underlying hardware:

```
root@beaglebone:~# ls -l /sys/bus/i2c/devices/i2c-*
lrwxrwxrwx   1 root    root            0 Jan  1  2000 /sys/bus
/i2c/devices/i2c-0 -> ../../../devices/ocp.2/44e0b000.i2c/i2c-0
lrwxrwxrwx   1 root    root            0 Jan  1  2000 /sys/bus
/i2c/devices/i2c-1 -> ../../../devices/ocp.2/4819c000.i2c/i2c-1
```

So you can see here, that on my BBB, i2c0 is mapped to /dev/i2c-0 and i2c2 is mapped to
/dev/i2c-1.

You can check your system, but I suspect that i2c-1 is actually i2c2 on pins P9_19,20.


-W.



[1] BBB I2C Ports.  See http://circuitco.com/support
/index.php?title=Cape_Expansion_Headers#2_I2C_Ports

[2] TI Sitara AM335x SRM, page 211, 212. See http://elinux.org/images/6/65/Spruh73c.pdf