



Bluetooth device tree configuration



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Stable: 17.11.2021 - 10:46 / Revision: 17.11.2021 - 15:58

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== Article purpose == This article explains how to configure "Bluetooth" <ref name="Bluetooth">[[WLAN_and_Bluetooth_hardware_component|Bluetooth]] </ref> "" when the peripheral "(or peripheral associated to the framework)" is assigned to the Linux^{®} OS". The configuration is performed using the "device tree mechanism" <ref>[[Device tree]]</ref>. The Bluetooth companion chip chosen on our platform is a Cypress chip <ref>[http://wireless.murata.com/datasheet?/RFM/data/lbee5kl1dx.pdf MURATA CYW4343W datasheet]</ref> == Bluetooth DT bindings documentation == The "Bluetooth"<ref name="WLAN and BT external peripheral">[[WLAN_and_Bluetooth_hardware_component]]</ref> "" tree bindings are composed of: * STM32 USART device tree bindings <ref>[[Serial TTY device tree configuration]]</ref> * The Cypress device, used as child node <ref>{{CodeSource | Linux kernel | Documentation/devicetree/bindings/net/broadcom-bluetooth.txt}}</ref> of the host USART device to which the slave device is attached. == Bluetooth DT configuration == This hardware description is a combination of the STM32 microprocessor device tree files (.dtsi extension) and board device tree files (.dts extension). See the device tree for an explanation of the device tree file split. === Bluetooth DT configuration (STM32 level) === The USART peripheral node is located in "stm32mp157c.dtsi" * This is a set of properties that may not vary for given STM32 device, such as: registers address, clock, reset... The USART DT configuration is explained in [[Serial TTY device tree configuration]] === Bluetooth DT configuration (board level) === {{ReviewsComments|NSA W940 : I would have say as below in stead of you first proposal?}} ""For {{EcosystemRelease | revision=1.1.0|range=and after}}""
 ""For {{EcosystemRelease | revision=1.1.0}}""
 [Description for the STM32MP15-Ecosystem-v1.1.0 revision] {{ReviewsComments|NSA W940 : why adding this sentence into brackets?}} &usart2 { ... st,hw-flow-ctrl; {{highlight|/* enable hardware flow control */}} ... bluetooth { {{highlight|/* node of Bluetooth companion chip */}} shutdown-gpios = <&gpioz 6 GPIO_ACTIVE_HIGH>; {{highlight|/* GPIO specifier, used to enable the BT module */}} compatible = "brcm,bcm43438-bt"; max-speed = <3000000>; }; }; Specific properties for USART: * st,hw-flow-ctrl: bool flag to enable hardware flow control <div class="mw-collapsible mw-collapsed"> ""For {{EcosystemRelease | revision=1.0.0 | range=and before}}""<div class="mw-collapsible-content"> [Description for the STM32MP15-Ecosystem-v1.0.0 and previous revisions] {{ReviewsComments|NSA W940 : why adding this sentence into brackets ?}} &usart2 { ... st,hw-flow-ctrl; {{highlight|/* enable hardware flow control */}} ... bluetooth { {{highlight|/* node of Bluetooth companion chip */}} pinctrl-names = "default"; pinctrl-0 = <&btreg>; {{highlight|/* GPIO to power up or down the internal companion chip regulators */}} compatible = "brcm,bcm43438-bt"; max-speed = <3000000>; }; }; Specific properties for USART: * btreg: GPIO to power up or down the internal CYW4343W regulators used by the Bluetooth section * st, hw-flow-ctrl: bool flag to enable hardware flow control </div></div> == How to configure Bluetooth using CubeMX == The [[STM32CubeMX]] tool can be used to configure the STM32MPU device and get the corresponding [[Device_tree#STM32|platform configuration device tree]] files.
 The STM32CubeMX may not support all the properties described in the above [[#Bluetooth DT bindings documentation|DT bindings documentation]] paragraph. If so, the tool inserts ""user sections"" in the generated device tree. These sections can then be edited to add some properties and they are preserved from one generation to another. Refer to [[STM32CubeMX]] user manual for further information. ==References== <references /> <noinclude> {{ArticleBasedOnModel | Peripheral or framework device tree configuration model}} {{PublicationRequestId | 10171 | 2019-01-02 | PhilipS}} [[Category: Device tree configuration]] [[Category:Bluetooth]] </noinclude>

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