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eDM-SBC-iMX6-PPC
WiFi-additionals

Revision: r-003
Date: 2023–07–20

Revision History

Revision	Date	Author(s)	Description
r-001	2020-05-06	Albert,Elmar	Initial version
r-001	2020-05-06	Albert,Elmar	Added BlueTooth config
r-003	2023–07–20	Albert,Elmar	Correcting Typo, updated the Link to the Datasheet

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Contents

1   Introduction

This document describes how to add new/additional wifi modules to the DMO Linux BSP.

2   SparkLAN WPEQ-261ACN(BT)

As mentioned in the datasheet, the SparkLAN WPEQ-261ACN(BT) WiFi module uses a Qualcomm Atheros QCA6174A-5 device .
According to this driver page, the ath10k linux driver is used to suppoert this module.

2.1   Enable the driver in DMO Linux BSP

- To enable the driver in DMO Linux BSP, first clone the latest linux kernel from GitHub

- Creat a new build directory and move there

- set the arm cross-toolchain

- prepare build directory using dmo-imx6-ppc_defconfig, e.g.:
  make -C /path/to/source O=$PWD dmo-imx6-ppc_defconfig

- in menuconfig additionally set the following configs for wifi:

```
1        CONFIG_ATH_COMMON=y
2        CONFIG_ATH10K=y
3        CONFIG_ATH10K_PCI=y
```

- in menuconfig additionally set the following configs for bluetooth:

```
1        CONFIG_BT_HCIUART_QCA=y
```

- build the kernel

- copy the kernel and device tree to the boot partition of the target boot device

- boot the target

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2.2   Testing the new WiFi/BT-Module

```
$ lspci -v

    ...

01:00.0 Network controller: Qualcomm Atheros QCA6174 802.11ac Wireless Network A
        Subsystem: Device 1dac:0261
        Flags: bus master, fast devsel, latency 0, IRQ 302
        Memory at 01000000 (64-bit, non-prefetchable) [size=2M]
        Capabilities: [40] Power Management version 3
        Capabilities: [50] MSI: Enable+ Count=1/8 Maskable+ 64bit-
        Capabilities: [70] Express Endpoint, MSI 00
        Capabilities: [100] Advanced Error Reporting
        Capabilities: [148] Virtual Channel
        Capabilities: [168] Device Serial Number 00-00-00-00-00-00-00-00
        Capabilities: [178] Latency Tolerance Reporting
        Capabilities: [180] L1 PM Substates
        Kernel driver in use: ath10k_pci


$ ifconfig -a

    ...

wlp1s0    Link encap:Ethernet   HWaddr 00:0e:8e:8d:c9:69
          BROADCAST MULTICAST   MTU:1500   Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)   TX bytes:0 (0.0 B)
```

- For testing WiFi connections, use the Linux command line tools.

- For testing the bluetooth functionality, please follow these instructions.

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