

Inventek Systems ISM43362-B81 on MCIMX6UL-EVK

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Introduction

This page will show you step-by-step how to interface a Inventek Systems ISM43362-B81 Wi-Fi 2.4Ghz SDIO SIP Module to the NXP MCIMX6UL-EVK.

[Demo](#)

[Demo2](#)

Hardware Requirements

NXP MCIMX6UL-EVK base board:

[MCIMX6UL-EVK](#) at Digi-Key

Inventek Systems ISM43362-B81 Evaluation Board:

[ISM43362-B81-EVB](#) at Digi-Key



Software Requirements

- Install Software Image as shown: [MCIMX6UL-EVK](#).
- Supplier Documentation: [ISM43362-B81 Wi-Fi 2.4Ghz SDIO SIP Module](#)

Modify /boot/uEnv.txt

This will force u-boot to load our customized device tree that is expecting the ISM43362-B81 to be connected over the large mmc interface.

```
/boot/uEnv.txt
```

```
dtb=imx6ul-14x14-evk-ism43362-b81-evb.dtb
```

Add ISM43362-B81's firmware

We are assuming your microSD is stilll mounted at /media/rootfs/

```
~/
```

```
wget https://raw.githubusercontent.com/rcn-ee/sdk-firmware/master
/inventeksys/ISM43362_NVRAM_C1.txt
mkdir -p /media/rootfs/lib/firmware/brcm/
sudo cp -v ISM43362_NVRAM_C1.txt /media/rootfs/lib/firmware/brcm
/brcmfmac43362-sdio.txt
```

Insert microSD and ISM43362-B81 and power up board

```
~/
```

```
debian@arm:~$ dmesg | grep brcm
[ 22.217393] usbcore: registered new interface driver brcmfmac
[ 22.486704] brcmfmac: brcmf_c_preinit_dcmds: Firmware version = wl0:
Apr 22 2013 14:50:00 version 5.90.195.89.6 FWID 01-b30a427d
[ 22.694656] brcmfmac: brcmf_cfg80211_reg_notifier: not a ISO3166 code
(0x30 0x30)
[ 25.208737] brcmfmac: brcmf_p2p_create_p2pdev: timeout occurred
[ 27.884778] brcmfmac: brcmf_p2p_create_p2pdev: timeout occurred
```

```
~/
```

```
debian@arm:~$ sudo ifconfig -a wlan0
wlan0      Link encap:Ethernet  HWaddr c4:7f:51:80:05:e1
           inet6 addr: fe80::c67f:51ff:fe80:5e1/64 Scope:Link
           UP BROADCAST RUNNING MULTICAST DYNAMIC MTU:1500 Metric:1
           RX packets:1242 errors:0 dropped:2 overruns:0 frame:0
           TX packets:30 errors:0 dropped:0 overruns:0 carrier:0
           collisions:0 txqueuelen:1000
           RX bytes:165088 (161.2 KiB)  TX bytes:5625 (5.4 KiB)
```

Kernel patch utilized

```
~/
diff --git a/arch/arm/boot/dts/imx6ul-14x14-evk.dts b/arch/arm/boot/dts
/imx6ul-14x14-evk.dts
index 7207280..5687142 100644
--- a/arch/arm/boot/dts/imx6ul-14x14-evk.dts
+++ b/arch/arm/boot/dts/imx6ul-14x14-evk.dts
@@ -35,6 +35,16 @@
                                gpio = <&gpio1 9 GPIO_ACTIVE_HIGH>;
                                enable-active-high;
                                };
+
+                                w1reg_on: fixedregulator@100 {
+                                compatible = "regulator-fixed";
+                                regulator-min-microvolt = <5000000>;
+                                regulator-max-microvolt = <5000000>;
+                                regulator-name = "w1reg_on";
+                                gpio = <&gpio5 1 GPIO_ACTIVE_HIGH>;
+                                startup-delay-us = <100>;
+                                enable-active-high;
+                                };
+                                };
};

@@ -123,12 +133,17 @@
                                status = "okay";
                                };

+&reg_sd1_vmmc {
+                                regulator-always-on;
+};
+
+&usdhc1 {
+                                pinctrl-names = "default", "state_100mhz", "state_200mhz";
+                                pinctrl-0 = <&pinctrl_usdhc1>;
+                                pinctrl-1 = <&pinctrl_usdhc1_100mhz>;
+                                pinctrl-2 = <&pinctrl_usdhc1_200mhz>;
+                                cd-gpios = <&gpio1 19 GPIO_ACTIVE_LOW>;
+                                no-1-8-v;
+                                keep-power-in-suspend;
+                                wakeup-source;
+                                vmmc-supply = <&reg_sd1_vmmc>;
@@ -317,7 +332,7 @@
                                pinctrl_usdhc1: usdhc1grp {
                                fsl,pins = <
                                        MX6UL_PAD_SD1_CMD__USDHC1_CMD                0x17059
-                                        MX6UL_PAD_SD1_CLK__USDHC1_CLK                0x10059
+                                        MX6UL_PAD_SD1_CLK__USDHC1_CLK                0x10071
                                        MX6UL_PAD_SD1_DATA0__USDHC1_DATA0           0x17059
                                        MX6UL_PAD_SD1_DATA1__USDHC1_DATA1           0x17059
                                        MX6UL_PAD_SD1_DATA2__USDHC1_DATA2           0x17059
```

```

@@ -325,6 +340,7 @@
                                MX6UL_PAD_UART1_RTS_B__GPIO1_IO19      0x17059
/* SD1 CD */
                                MX6UL_PAD_GPIO1_IO05__USDHC1_VSELECT    0x17059
/* SD1 VSELECT */
                                MX6UL_PAD_GPIO1_IO09__GPIO1_IO09      0x17059
/* SD1 RESET */
+
                                MX6UL_PAD_SNVS_TAMPER1__GPIO5_IO01 0x3029
                                >i
                                };

@@ -336,7 +352,7 @@
                                MX6UL_PAD_SD1_DATA1__USDHC1_DATA1 0x170b9
                                MX6UL_PAD_SD1_DATA2__USDHC1_DATA2 0x170b9
                                MX6UL_PAD_SD1_DATA3__USDHC1_DATA3 0x170b9
-
+
                                MX6UL_PAD_SNVS_TAMPER1__GPIO5_IO01 0x3029
                                >i
                                };

@@ -348,6 +364,7 @@
                                MX6UL_PAD_SD1_DATA1__USDHC1_DATA1 0x170f9
                                MX6UL_PAD_SD1_DATA2__USDHC1_DATA2 0x170f9
                                MX6UL_PAD_SD1_DATA3__USDHC1_DATA3 0x170f9
+
                                MX6UL_PAD_SNVS_TAMPER1__GPIO5_IO01 0x3029
                                >i
                                };

```