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ST-NXP Wireless

UM10078

Installation guide for the ISP1362 host controller on Linux 2.6.6

Rev. 01 — 17 October 2007

User manual

Document information

Info	Content
Keywords	isp1362; host controller; universal serial bus; usb, linux, 2.6.6,
Abstract	This document explains the installation of Linux version 2.6.6, with the kernel directory for the ISP1362 host controller.

Revision history

Rev	Date	Description
01	20071017	First release.

Contact information

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1. Introduction

This document explains the installation of Linux version 2.6.6, with kernel directory `/usr/src/linux-2.6.6` for the ISP1362 host controller.

2. Installation environment

This document is based on the installation of the ISP1362 PCI card on a newly formatted hard disk, and using Fedora core 2 with kernel version 2.6.5-1.358 as the initial install. Kernel version 2.6.5-1.358 must be changed to kernel version 2.6.6. The Linux-2.6.6 kernel source can be downloaded from the kernel.org site. Make sure that you have the required files to run the ISP1362 host controller (**ISP1362_Host.tar.gz**) and the optional **.config** file.

3. Extracting source files

Place the downloaded kernel source (**Linux-2.6.6.tar.bz2** or **gz**) in the `/usr/src` directory and extract the kernel source files to the directory.

Steps to extract gz files:

```
#cd /usr/src
#tar -zxvf linux-2.6.6.tar.gz
```

Steps to extract bz/bz2 files:

```
#cd /usr/src
#tar -jxvf linux-2.6.6.tar.bz2
Or,
#cd /usr/src
#tar -jxvf linux-2.6.6.tar.bz2
```

4. Extracting ISP1362_Host modules

Copy **ISP1362_Linux266_HCD_Ver1.1.0.0** to `/usr/src/linux-2.6.6/drivers/usb/`.

Go to `/usr/src/linux-2.6.6/drivers/usb/ISP1362_Linux266_HCD_Ver1.1.0.0` and run:

```
#tar -xvzf ISP1362_Host.tar.gz
```

Go back to `/usr/src/linux-2.6.6`.

5. Compiling and installing Linux-2.6.6

Compile and install **Linux kernel version 2.6.6** with loadable module support enabled.

Go to `/usr/src/linux-2.6.6/`, and run:

```
#make menuconfig
```

Go to **Loadable module support** and enable the following:

- **Enable loadable module support**
- **Module unloading**

Save and exit the configuration.

Or,

Copy the given **.config** file to the root directory of your kernel source.

```
#make menuconfig
```

Save and exit the configuration.

After exiting **menuconfig**, a new **.config** is created.

Run the following commands:

```
#make
```

```
#make modules
```

```
#make modules_install
```

```
#make install
```

If you are using **grub bootloader**, the kernel image is already added to **grub.conf**.

If you are using **lilo bootloader**, run **lilo** every time modification is made to **lilo.conf**.

Then reboot your computer and run the newly compiled kernel.

6. Creating and inserting binaries for the host controller

After installing the new kernel (Linux-2.6.6):

Go to **/usr/src/linux-2.6.6/drivers/usb/ISP1362_Linux266_HCD_Ver1.1.0.0** and run:

```
#cd ISP1362_Host
```

Make sure the **KERNEL_DIR** directory in **phci/Makefile** points to your Linux-2.6.6 kernel source.

Compile the **ISP1362_Host** code:

```
#make -C <linux kernel dir path> M=$PWD
```

To install modules, run:

```
#./imod
```

To uninstall modules, run:

```
#./dmod
```

7. Enabling the debug message

Interface-based debug options are found in **hal_intf.h** and **phci_debug.h**.

You can enable the required debug messages by defining their related macros:

- **DEBUG_HCI_LEVEL** for Host Controller Interface (HCI) debugging
- **DEBUG_HAL_LEVEL** for Hardware Abstraction Layer (HAL) debugging

Example: To enable or disable HCI interface debug messages:

```
#define DEBUG_HCI_LEVEL DEBUG_HCI_DISABLED
```

Or,

To debug only HCI bus driver interfaces:

```
#define DEBUG_HCI_LEVEL DEBUG_HCI_BUS_DRIVER_INTF
```

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