

SuSE9.3 Linux TTEC Driver Setup Guide **for ST-A10**

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TOSHIBA TEC CORPORATION

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1. Introduction

This document describes the procedures and cautions for installing the Linux drivers developed by Toshiba TEC Corporation (TTEC) on the ST-A10.

Roughly this document consists of the following two parts:

- 1) Folder structure of release kit
- 2) Installation of TTEC drivers

2. Folder Structure of Release Kit

	readme.pdf	(this document)
+---	audio	
	linux_audio_driver_v30.zip	(VIA audio driver package)
+---	drawer	
	+---document	(drawer driver specification)
	LinuxDrwSpec.pdf	
	+---module	(drawer driver module)
	drw.ko	
	\---source	(drawer driver source)
	drw.c	
	Makefile	
	tec_drw.h	
+---	compatkbd	
	+---module	(Keyboard interchangeable driver module)
	compat_keyb.ko	
	\---source	(Keyboard interchangeable driver source)
	compat_keyb.c	
	Makefile	
+---	ibutton	
	+---document	(USB iButton driver specification)
	LinuxUSBi-ButtonSpec.pdf	
	+---module	(USB iButton driver module)
	usbibutton.ko	
	\---source	(USB iButton driver source)
	dscore.h	
	load_usbibutton	
	Makefile	
	tec_usbibutton.c	
	tec_usbibutton.h	
	unload_usbibutton	
+---	lan	
	rhinefet.tgz	(VIA LAN driver package)
+---	liu	
	+---document	(LIU library specification)
	LinuxLIUSpec.pdf	
	+---module	(LIU library module)
	libliuctrl.so.0.0	
	\---source	(LIU library source)
	ftokex2.c	
	liuctrl.def	
	liuctrl.h	

```

|         liuctrl_misc.h
|         liu_cgw.c
|         liu_cmn.c
|         liu_cmn.h
|         liu_ctl.c
|         liu_exc.c
|         liu_exc2.c
|         liu_getcommerrcount.c
|         liu_img.c
|         liu_init.c
|         liu_initex.c
|         liu_param.h
|         liu_scr.c
|         liu_setcommerrcount.c
|         liu_trimark.c
|         Makefile
|         str_blink.c
|         str_hr_double.c
|         str_reverse.c
|         tec_serial.h
|         _fini.c
|
+---patch                                (POS keyboard patch)
|         tec_kbd-2.6.11.patch
|
+---raid
|         via_raid_linux_v100_20040412.zip (VIA SATA RAID driver package)
|
+---rsscan
|   +---document                          (RS232C scanner driver specification)
|   |         LinuxRSScanSpec.pdf
|   |
|   +---module                            (RS232C scanner driver module)
|   |         rsscan1.ko
|   |         rsscan2.ko
|   |
|   \---source                            (RS232C scanner driver source)
|         Makefile
|         rsscan.c
|         tec_rsscan.h
|
+---tpanel
|   \---elo                              (Elo touch panel driver package)
|         elorc
|         openmotif21-libs-2.1.30MLI4-124.i586.rpm
|         Unified_Serial_Source_RPM.zip

```

3. Installation of TTEC Drivers

3.1 Preparation

Create a directory path “/home/tec/tecdrv” and copy the following files from the ST-A10 driver kit CD-ROM to “/home/tec/tecdrv”.

[Patch file for POS keyboard driver]
/SuSE93/patch/tec_kbd-2.6.11.patch

[Keyboard interchangeable driver module]
/SuSE93/compatkbd/module/compat_keyb.ko

[RS232C scanner driver module]
/SuSE93/rsscan/module/rsscan1.ko

[LIU driver module]
/SuSE93/liu/module/libliuctrl.so.0.0

[USB jButton module]
/SuSE93/ibutton/module/usbibutton.ko
/SuSE93/ibutton/source/load_usbibutton
/SuSE93/ibutton/source/unload_usbibutton

[Drawer module]
/SuSE93/drawer/module/drw.ko

Follow the procedure below after logging in as a root user.

3.2 POS Keyboard Driver

How to apply the patch file “tec_kbd-2.6.11.patch” to the POS keyboard driver. And, Method of installing keyboard interchangeable driver:

Only when the following drivers are used, it is necessary to execute this procedure.

- jButton driver
- RS232C scanner driver
- MCR driver

In this case, the following two work is needed.

- Patch application to POS keyboard driver
the patch must be applied to the POS keyboard driver so that an input from a driver can be notified as a key event to the application.
- The keyboard interchangeable driver's installation
When OS starts, the PS/2 keyboard driver is not loaded in SuSE9.3 at the PS/2 keyboard unconnection. It makes an error of the setkeycodes command executed since 3.3 because of this. Therefore, after OS starts, it is necessary to install a keyboard interchangeable driver instead of the PS/2 keyboard driver.

[Patch application to POS keyboard driver]

When the patch is applied, the following files are overwritten:

```
usr/src/linux-2.6.11.4-20a/drivers/input/keyboard/atkbd.c
/usr/src/linux-2.6.11.4-20a/drivers/input/serio/i8042.c
/usr/src/linux-2.6.11.4-20a/drivers/char/keyboard.
```

Before applying this patch, make sure to create a backup file for each file using the following commands because the patch does not automatically create backup files.

```
]# cd /usr/src/linux-2.6.11.4-20a/
]# cp -p drivers/input/keyboard/atkbd.c drivers/input/keyboard/atkbd.c.orig
]# cp -p drivers/input/serio/i8042.c drivers/input/serio/i8042.c.orig
]# cp -p drivers/char/keyboard.c drivers/char/keyboard.c.orig
```

Copy this patch file to the directory where the kernel source is installed.

Note: The directory differs depending on distribution type or version of the kernel source.

Move to the directory where the patch is stored, set “0” to the “p” option of the patch command, then execute the following commands.

```
]# cp -p /home/tec/tecdrv/tec_kbd-2.6.11.patch /usr/src/linux-2.6.11.4-20a/
]# cd /usr/src/linux-2.6.11.4-20a/
]# patch -p0 < tec_kbd-2.6.11.patch
```

After applying the patch, rebuild the kernel.

[How to rebuild the kernel]

Execute the following commands in order from the top:

```
]# make oldconfig      ⇒ Obtains configuration information of the kernel in operation.
]# make dep; make clean ⇒ Reconstructs dependency relationship and deletes all interim
                        files.
]# make bzImage       ⇒ Compiles the kernel.
]# make modules       ⇒ Compiles the driver modules.
]# make install       ⇒ Installs the kernel.
]# make modules_install ⇒ Installs the drivers.
```

When the touch panel driver provided by Elo TouchSystems has been installed, dependency information among the touch panel modules will disappear. Execute the following commands and register the dependency information again.

```
]# cp -p /elo/elok_s,ko /lib/modules/2.6.11.4-20a-default/kernel/drivers
]# depmod -a
```

Finally, restart the operating system.

[The keyboard interchangeable driver's installation]

Please execute the following command to install a keyboard interchangeable driver after the patch to the POS keyboard driver is applied.

Note: Restarting the operating system clears this setting. The procedure must be performed whenever the operating system is restarted.

Note: It is necessary to execute this procedure ahead of the procedure since 3.3.

Installation of module

```
]# insmod /home/tec/tecdrv/compat_keyb.ko
```

3.3 LIU

Execute the following commands in order and register the LIU driver to SharedLibrary.

Note: Once a driver is registered to SharedLibrary, the driver is automatically loaded at the startup of operating system.

1. Copy of file to the SharedLibrary folder

```
]# cp -p /home/tec/tecdrv/libliuctrl.so.0.0 /usr/lib/
```
2. Registration of driver to SharedLibrary

```
]# ldconfig -n /usr/lib/
```
3. Creation of symbolic link

```
]# ln -s /usr/lib/libliuctrl.so.0.0 /usr/lib/libliuctrl.so
```

3.4 RS232C Scanner

Execute the following commands in order to install the RS232C scanner driver.

Note: Restarting the operating system clears this setting. The procedure must be performed whenever the operating system is restarted.

1. Installation of module

```
]# insmod /home/tec/tecdrv/rsscan1.ko
```

Note: Describe a parameter if any change to the default is required, such as port to be used and scanner type.

2. Creation of device file

```
]# mknod /dev/rsscan1 c 245 0
```
3. Keycode configuration

```
]# setkeycodes 0x60 120
```

3.5 USB iButton

Before installing the USB iButton driver, connect the USB iButton adapter.

After the USB iButton adapter is connected, the “ds9490r.ko” file, required for installing the iButton driver, is automatically installed. Using the lsmod command, make sure the iButton driver has been installed.

Then, execute the following commands in order.

Note: Restarting the operating system clears this setting. The procedure must be performed whenever the operating system is restarted.

1. Execution of script to load USB iButton driver

```
]# cd /home/tec/tecdrv/  
]# ./load_usbibutton
```

2. Keycode configuration

```
]# setkeycodes 0x68 93
```

3.6 Drawer

Execute the following commands in order to install the drawer driver.

Note: Restarting the operating system clears this setting. The procedure must be performed whenever the operating system is restarted.

1. Installation of module

```
]# insmod /home/tec/tecdrv/drw.ko
```

2. Creation of device file

```
]# mknod /dev/drw c 242 0
```

3.7 MCR

For the MCR, only the keycode must be set.

Note: Restarting the operating system clears this setting. The procedure must be performed whenever the operating system is restarted.

Keycode configuration

```
]# setkeycodes 0x61 121
```

3.8 RS232C POS Printer

No settings are required for a POS printer because the Linux standard serial driver is used.