

**AW-GD200**

**Linux Driver Installation & User Guide**

**Version: 1.1  
2005/10/20**

## **History**

<b>Version</b>	<b>Date</b>	<b>Description</b>
1.0	2005/08/01	First Edition
1.1	2005/10/20	Add iwconfig user command

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## **Introduction**

This guide explains how to install the following software on a Linux based desktop or laptop computer:

- AW-GD200 Driver for Linux system

This adapter can be used in a non-PC device to easily enable Wireless connectivity.

### **1.1 Installation**

The installation procedure includes two main steps:

1. Compile the Driver
2. Install the Driver

#### **1.1.1 Adapter Linux Driver**

The driver is distributed in source-code format. In order to compile the driver, you need to have the Linux source tree installed in your desktop/laptop computers, preferably in the /usr/src/linux directory. This driver has been tested with Linux version 2.4.22 and compiled with gcc 3.2.2. The host Linux system that was used to compile and test the driver is based on Slackware 9.1 distribution.

#### **1.1.2 Installation and Configuring the Linux Source Tree**

The requirements for the environment to install and configure the Linux source tree are:

- Linux kernel source v2.4.22
- GCC v3.2.2
- Wireless Tools version 26

Then you have to follow the steps below to complete the installation and configuration process.

1. Download the Linux kernel file from <http://www.kernel.org>.
2. Untar the source in the /usr/src directory.
3. Create a symbolic link to the Linux source tree to a directory called "linux".
4. Run "make menuconfig" in the Linux directory and then enable the Wireless LAN under "Network Device Support"/"Wireless LAN (Non Hamradio)".
5. Configure any other options as required.
6. Exit and save the configuration.

The Linux kernel does not have to be compiled when you compile the driver. However, you must install the same version of the kernel which the driver is compiled against to run the driver.

#### **1.1.3 Compile the Driver**

If the Linux source tree is not presented in the default Linux directory, you can modify the KERNELDIR parameter in the Makefile to direct to the location of the kernel source.

Then you can follow the steps below to compile the Linux driver:

- a) Type "make clean". Verify that there is no legacy file in the target directory.
- b) Type "make". Verify that the file "deep31.o" is built and placed in the target directory.
- c) The deep31.o is the driver compiled as a module for the current kernel. The Makefile also tries to copy the driver to the /lib/modules/2.4.22/pcmcia directory so that the driver can be easily loaded at boot time.

If you want to remove debug options -DDEBUG and -DDBG, they can be removed from Makefile CFLAGS variable.

#### **1.1.4 Install the Driver**

After inserting the adapter, you can run  
insmod deep31.o  
to load the driver into the kernel.

#### **1.1.5 Overall Installation Procedure**

As a summary, the overall installation procedure for Linux driver is as below:

1. Extract the source into any directory. For example,

```
cd /usr/src  
tar xvzf mb31ep_sdk_2_1_x_x.tar.gz
```

2. Go to the created directory and then compile the source code

```
cd MB31-DeepLinux  
make clean  
make
```

This should create the file deep31.o which is the driver as a loadable module.

3. There are four options to operate the driver.

a) To load this driver as AP mode, you can type  
insmod deep31.o active="deep\_ap"

b) To load this driver as Client mode, you can type  
insmod deep31.o active="deep\_wb"

c) To load this driver for firmware upgrade in AP mode  
insmod deep31.o active="change\_ap\_mode"

d) To load this driver for firmware upgrade in Client mode  
insmod deep31.o active="change\_wb\_mode"

(or You can execute/modify the run1 script in the source file directory to load driver)

4. If debug is enabled in the Makefile (-DDEBUG -DDBG) then debug messages can be printed out through the klogd facility of the Linux kernel. The standard log files are in folder /var/log/debug, folder /var/log/messages and folder /var/log/syslog.

## 2.0 Configure a wireless network interface

The following describes the configuration of AW-GD200 wireless driver using the wireless extension tools.

### 2.1 iwconfig

**iwconfig** is dedicated to the wireless interfaces. It is used to set the parameters of the network interface which are specific to the wireless operation (for example: the frequency). **iwconfig** may also be used to display those parameters, and the wireless statistics.

The format of the iwconfig is depicted as following:

```
iwconfig  
iwconfig -help  
iwconfig interface  
iwconfig interface [parameters]
```

#### Parameters

```
[essid X] [nwid N] [freq F] [channel C] [sens S] [mode M]  
[ap A] [nick NM] [rate R] [rts RT][frag FT] [txpower T]  
[enc E] [key K] [power P] [retry R] [commit]
```

Please refer the wireless extension tool manual for more information.

### **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

**This device is intended only for OEM integrators under the following conditions:**

The antenna must be installed such that 20 cm is maintained between the antenna and users, and

The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: TLZ-GD200

**Manual Information That Must be Included**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for OEM integrators must include the following information in a prominent location " **IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

DGT 警語：

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低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

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