

OVERVIEW

The **TS-WIFIBOX** Application Kit includes a complete solution for 802.11g WiFi applications. The one-piece setup includes a TS-7400 200Mhz ARM9 SoM engine, a Hammond aluminum enclosure, two aluminum end-plates and an internal 802.11g WiFi card integrated with external antenna. In addition, Linux drivers and software packages are installed to provide an out-of-the-box WiFi solution.

On the software side, the TS-WIFIBOX is powered with the Linux OS pre-installed with busybox and all the tools and drivers to make the WiFi module work out-of-the-box.

Additional TS-WIFIBOX features include:

- ✓ Internal TS-7400 SoM engine
- ✓ Ultra-Fast Bootup Firmware
- ✓ 200 MHz ARM9 processor with MMU
- ✓ Internal 802.11g WiFi with external antenna
- ✓ Industrial quality design, Rugged aluminum enclosure, No moving parts, Industrial power connector will not loosen, Low power, low heat, long life, All components soldered-on
- ✓ SD Card clamped in socket
- ✓ 32 MB SDRAM (up to 128 MB optional)
- ✓ 32 MB NAND Flash
- ✓ 1 10/100 Ethernet port
- ✓ 1 USB 2.0 Compatible OHCI ports (12 Mbit/s Max)
- ✓ Up to 4GB flash via SD Card
- ✓ WiFi drivers and packages for Linux
- ✓ Optional On-Board Temperature Sensor
- ✓ Optional Battery-Backed RTC



Notes

The TS-WIFIBOX makes use of a TS-7400 computer module. Please, refer to the TS-7400 documentation for further information.

POWER ON AND CONNECTION TO THE BOARD

The TS-WIFIBOX can be powered either by a 5VDC power supply through a connector in the front panel (LEDs, Ethernet and USB connectors), or by a 8-30VDC power supply through a screw terminal connector in the rear panel (WiFi antenna). The 5VDV is the standard option, while the switching power regulator is optional.

Before power on your TS-WIFIBOX, make sure to connect a valid network cable on the Ethernet connector. After power on, the board will boot Linux and after about 8 seconds it will be possible to use the telnet, ftp and http services through the default IP 192.168.0.50. Telnet to the board (**telnet 192.168.0.50**) using user root - no password is required.



Notes

There is no serial console on the TS-WIFIBOX. The TS-9441 peripheral board provides a serial console. However, it is possible to login to Linux through Telnet.

The following are the possible connections by default:

- ✓ Using telnet client: telnet 192.168.0.50, user root, no password
- ✓ Using ftp client: ftp 192.168.0.50, user root, no password
- ✓ Using web browser: <http://192.168.0.50/>

THE WIFI INTERFACE

The Linux driver for the WiFi interface is included in the Linux distribution and is loaded during boot-up. Also, the Wireless Tools for Linux (iwtools) come installed by default with the TS-WIFIBOX. iwtools commands include: **iwconfig**, **iwlist**, **iwevent**, **iwgetif**, **iwspy**, **iwpriv**. Help information is available by supplying '--help' for any of these commands in the Linux prompt (login using telnet). For example: 'iwconfig --help'.

The sequence of commands that can be used to connect to an ESSID network follows:

```
ifconfig wlan0 down
iwconfig wlan0 essid 'NAME'
iwconfig wlan0 commit
ifconfig wlan0 up
```

Use the following commands to scan for available WiFi networks:

```
iwlist wlan0 scan
```

Use the following command to configure the client interface using DHCP:

```
udhcpc -n -i wlan0
```

EASY WIFI CONFIGURATION TOOLS

The '**wlscan**' utility is installed in Linux to help you configure the wireless interface. Just type 'wlscan' after logged in as root via telnet. Type 'help' for help information then.

Furthermore, there is a simple web interface to play around with the wireless tools for Linux. Try it clicking by entering <http://192.168.0.50/> on your favorite web browser.

FURTHER REFERENCE

To take full advantage of the TS-WIFIBOX, it is highly recommended the reading of the TS-7400 documentation and the Linux Manuals provided by Technologic Systems as well.

- ✓ TS-WIFIBOX web page (<http://www.embeddedarm.com/epc/wifi-h.htm>)
- ✓ TS-7400 web page (<http://www.embeddedarm.com/epc/ts7400-spec-h.htm>)
- ✓ Wireless Tools for Linux
(http://www.hpl.hp.com/personal/Jean_Tourrilhes/Linux/Tools.html)
- ✓ Linux for ARM on TS-7000 (<http://www.embeddedarm.com/linux/ARM.htm>)

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