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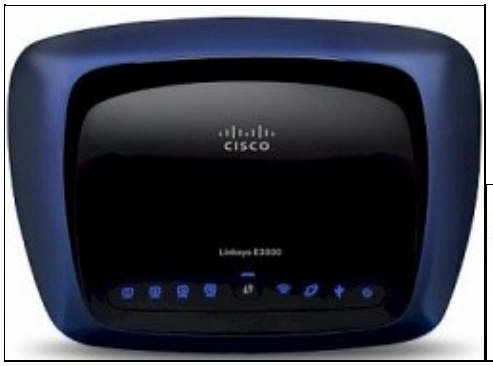
Hardware Specifications



Characteristic	Value
CPU	Broadcom BCM4718
CPU Speed	480 MHz
Flash ROM	8 MB
RAM	64 MB
Radios	2.4 GHz, 5 GHz
WLAN Support	a/b/g/n
WLAN Max Speed	300 Mbps
Antenna Location	Internal
Switch	4x GigE + 1 WAN
USB	1x USB 2.0

Output Power

You can use these figures to come up with what Tx power would be best for you. As factory lists it at a max of 20dBm, then a setting of 100mW could be used as 20dBm = 100mW, 17dBm = 50mW, and so on.

2.4GHz output power per TX chain

802.11b: Max. 20.5dBm @ All rates

802.11g: Max. 20.5dBm @ Low rates

Max. 19.5dBm @ High rates

Wireless-N 20MHz: Max. 20.5dBm @ Low rates

Max. 18.5dBm @ High rates

Wireless-N 40MHz: Max. 17.0dBm @ All rates

5GHz output power per TX chain

UNII-1 (5150-5250GHz)

802.11a: Max. 14.0dBm @ All rates

Wireless-N 20MHz: Max. 11.5dBm @ All rates

Wireless-N 40MHz: Max. 12.0dBm @ All rates

UNII-3 (5725-5850GHz)

802.11a: Max. 17.5dBm @ High rates

802.11a: Max. 20.0dBm @ Low rates

Wireless-N 20MHz: Max. 17.5dBm @ High rates

Wireless-N 20MHz: Max. 20.0dBm @ Low rates

Wireless-N 40MHz: Max. 17.5dBm @ High rates

Wireless-N 40MHz: Max. 21.0dBm @ Low rates

Internal PIFA antennas are rated at 3dBi

Flashing Instructions

DON'T BRICK YOUR ROUTER! AFTER FLASHING WITH THE TRAILED BUILD, IF YOU THEN FLASH A BUILD THAT DOESN'T HAVE e2k-e3k in the NAME OF THE BUILD YOU ARE FLASHING YOU *WILL* BRICK YOUR e3000 ROUTER. ALSO reference this post regarding the newer NV60K.BINS FOR ALL E~ Series linksys
http://www.dd-wrt.com/phpBB2/viewtopic.php?p=569485&highlight=#569485

1. Read all required reading sections of the peacock announcement: http://www.dd-wrt.com/phpBB2/viewtopic.php?t=51486
2. Disconnect all cables and wireless clients.
3. As a precaution, USB disks should be removed before flashing.
4. Do a Hard reset or 30/30/30 on router.
5. Connect 1 Lan cable to pc doing the flash.
6. Log into Web Interface and flash the firmware **E3000 Trailed Initial Flash Build**
7. Wait AT LEAST 5 minutes until WLAN light turns on.
8. Power cycle by unplugging E3000 for 30 secs.
9. Plug E3000 back in and wait about 5 minutes until it finishes booting.
10. Do a 30/30/30 reset on router.
11. Wait 3 minutes and log into web interface.
    - You may have to clear your browser cache before the web login will display.
12. You are done, but if you wish to flash another e2k-e3k build such as the 15692 e2k-e3k (must have e2k-e3k in the file name) follow the steps below. If you wish to (not recommended) flash a n60k build read the links about these new files above and below. You will need to flash a new post svn16773 e3000 file before flashing the n60k file. If you don't understand this, don't flash any builds past 16773 until you do.
13. Download the e2k-e3k/e3000 file you wish to flash.
14. Do another hard reset on your router
15. Login to the router at 192.168.1.1. Go to the administration/firmware upgrade page
16. Flash the file that you downloaded.
17. Wait AT LEAST 5 minutes until the WLAN light turn on, then unplug power on router and wait 30 seconds.
18. Plug power for the E3000 back in and wait about 5 minutes until it finishes booting.
19. Do a 30/30/30 reset on router.
20. Wait 3 minutes and log into web interface.
    - You may have to clear your browser cache before the web login will display.

Credits go out to mcannon-gso

As of July 2010 you can only use the trailed builds with the e3000 name in it for initial flashing and nothing else, using other bin's without the e3000 name in it for initial flashing may result in a bricked unit! After you have dd-wrt installed to your unit, you can then use the e2k-e3k.bin's for upgrading to newer builds. Using builds without e2k-e3k in the filename after initial flashing WILL BRICK YOUR ROUTER!

Experimental Builds

Experimental builds are available for the E3000. These have not been thoroughly tested and should not be used unless you have a problem with your current build that cannot be resolved with the build you are using.

Original Method

Any build past 16773 requires a different build, rather than e2k-e3k, for subsequent flashing. In order to use one of these experimental builds, you must ALREADY HAVE dd-wrt installed on your router using the instructions above, following the steps in the peacock announcement note 1, http://www.dd-wrt.com/phpBB2/viewtopic.php?t=51486 The first Eko -nv60k build is 16773; the first official BrainSlayer -nv60k build is 16785. If you have a pre 16773 build on the router then you can load either of BrainSlayers 16785 or 16994 builds with file name ending in e2k-e3k, flashing any those files will be the step stone bringing you over to -nv60k type builds.

- 16785:
  - ftp://ftp.dd-wrt.com/betas/2011/04-09-11-r16785/broadcom_K26/dd-wrt.v24-16785_NEWD-2_K2.6
  - ftp://ftp.dd-wrt.com/betas/2011/04-09-11-r16785/broadcom_K26/dd-wrt.v24-16785_NEWD-2_K2.6
  - ftp://ftp.dd-wrt.com/betas/2011/04-09-11-r16785/broadcom_K26/dd-wrt.v24-16785_NEWD-2_K2.6
- 16994:
  - ftp://ftp.dd-wrt.com/betas/2011/05-08-11-r16994/broadcom_K26/dd-wrt.v24-16994_NEWD-2_K2.6
  - ftp://ftp.dd-wrt.com/betas/2011/05-08-11-r16994/broadcom_K26/dd-wrt.v24-16994_NEWD-2_K2.6
  - ftp://ftp.dd-wrt.com/betas/2011/05-08-11-r16994/broadcom_K26/dd-wrt.v24-16994_NEWD-2_K2.6

16995 is the last dd-wrt build with upgrade files of e2k-e3k type, all upgrading thereafter is done with -nv60k type files.

Alternate Method

Read this *before* proceeding: http://www.dd-wrt.com/phpBB2/viewtopic.php?p=569485

Then flash the trailed mini of 21676 for the E3000. **21676 is a stable, reliable, recommended build for the E3000**, but ***only the mini version should be used***, since *larger versions have the dangerous Heartbleed vulnerability*. If you need more functionality than mini, upgrade to Kong (below).

Kong

Kong 22000++ is a stable, reliable, recommended large build for the E3000 without the Heartbleed vulnerability. You can (only) upgrade to Kong from DD-WRT. (There are no trialed Kong builds.) Two versions are available:

- DLNA (recommended for home users)
- VPN (recommended for office users)

(Easiest way to rip minidlna is flash the DLNA build then

```
cp /usr/sbin/minidlna /tmp/minidlna.conf /mnt
```

and then flash the VPN build.)

K3.x upgrade

To update your E3000 unit to K3.x. These EXACT builds MUST be used to upgrade to K3.x for the first time. Any other builds will soft brick the device....Start with a hard reset then follow the steps below.

Three steps required to get K3.x on the unit:

1 - K2.6_21676_mini_e3000 ....wait 5 minutes....hard reset.....next load from the GUI

2 - K2.6_21676_mega_nv60K ....wait 5 minutes....hard reset.....next load from the GUI

3 - K3.x_21676_mega_nv60K...wait 5 minutes....hard reset.

....after that you can put a newer K3.x_mega build on directly...no need for nv60K builds any longer.

[redhawk - 04/06/15]

Build Information

Always use the E~ series builds for upgrading. Anything else will brick your unit.

The latest builds for this unit can be currently found in the FTP. Support was added in 14826 and on.

Brainslayer added E3000 Support from 14929 and on and builds are to be found in the **broadcom_K26** folder.

Also it has been asked about the builds with e2k-e3k name in them, these builds are for if you already have those units flashed with dd-wrt, you can simply use one of those builds to upgrade, but the initial flash should always be done with the trailed build (build with the unit only name in it) linked above. ALSO reference this post regarding the newer NV60K.BINS FOR ALL E~ Series linksys
http://www.dd-wrt.com/phpBB2/viewtopic.php?p=569485&highlight=#569485

Useful Tips

- I have noticed with these style of linksys units, cooling can be very important to its performance, thus I have done a nice easy mod that will allow air flow for under the unit. Check this post for details. http://www.dd-wrt.com/phpBB2/viewtopic.php?p=475684&highlight=#475684 -buddee

- At step 5: "Wait 5 minutes until WAN light turns on". I waited for 5 minutes but the WAN light never turned on (I had no ethernet cable connected to the wan port). I didn't bother to wait for the WAN light to come up but **I did wait the 5 minutes** to continue with step 6 and further.

- The steps above also apply for people running a converted E3000 with a stock linksys firmware. With these steps it is possible to flash your converted E3000 (running stock linksys firmware) with DD-WRT.

- If you experience disconnects from the Internet/Network with this router feel free to try the following settings:

```
Wireless > Channel > Ch 161 (5GhZ)
Wireless > Channel > Ch 9     (2.4GhZ)
Wireless > Security > WPA2 Personal - AES
Wireless > Advanced Wireless Settings > Beacon Interval: 75
Wireless > Advanced Wireless Settings > Fragmentation Threshold: 2306
Wireless > Advanced Wireless Settings > RTS Threshold: 2307
Security > Firewall > Block Anonymous WAN Access <--- Uncheck
```

Wireless-N Configuration

As is explained in **http://www.dd-wrt.comhttp://www.dd-wrt.com/wiki/index.php/Wireless-N_Configuration** make sure that you use AES security for your wireless N network. Do not use TKIP or the wireless speed will revert to the g standard and that would be a pity. AES+TKIP is also allowed.

Printing

Printer Sharing gives a general description how to configure the router to connect a printer on the USB port. However it describes too much and things that are not needed or even not working for the E3000 router. Following procedure works with firmware DD-WRT v24-sp2 (12/24/10) mega, the latest version at the moment of writing.

So here a more specific description how to enable printing.

On the web interface of the router (**http://192.168.1.1**):

- Enable "Core USB Support", "USB 1.1 Support (UHCI)", "USB 1.1 Support (OHCI)", "USB 2.0 Support", "USB Printer Support" on the Services tab (all items under "USB Support" except for "USB Storage Support"). Note that the router did not recognize my printer if I left the USB 1.1 drivers unselected. This even though the printer supports USB 2.0.
- It is *not* necesary to enable JFFS2 support via Administration, Management
- Check that Secure Shell is enabled via Services, Service. SSHd and Password Login must be enabled
- Connect your printer to the router
- Reboot the router via Administration, Reboot Router

Via an ssh client (for example putty under Windows) connect via SSH on port 22 to the router:

- login as: root
- password: <your password that you use to login to the web interface>
- check if your printer was recognized:

```
root@my-ddwrt-router:~# dmesg | grep usb
usbcore: registered new interface driver usbfs
usbcore: registered new interface driver hub
usbcore: registered new device driver usb
usb usb1: configuration #1 chosen from 1 choice
usb usb2: configuration #1 chosen from 1 choice
```

```
usb 2-1: new full speed USB device using ohci_hcd and address 2
usb 2-1: configuration #1 chosen from 1 choice
usblp0: USB Bidirectional printer dev 2 if 0 alt 1 proto 2 vid 0x047E pid 0x1001
usbcore: registered new interface driver usblp
```

This indicates that a printer is detected on the USB port

- Now enter

```
root@my-ddwrt-router:~# netstat -an
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 0.0.0.0:9100            0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:80              0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:53              0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0    268 192.168.1.1:22          192.168.1.118:53385     ESTABLISHED
tcp        0      0 192.168.1.1:80          192.168.1.118:53547     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53538     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53545     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53548     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53543     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53540     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53544     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53541     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53542     TIME_WAIT
tcp        0      0 192.168.1.1:80          192.168.1.118:53546     TIME_WAIT
udp       0      0 127.0.0.1:34954         0.0.0.0:*
udp       0      0 0.0.0.0:53              0.0.0.0:*
udp       0      0 0.0.0.0:67              0.0.0.0:*
raw       0      0 0.0.0.0:255             0.0.0.0:*               255
Active UNIX domain sockets (servers and established)
Proto RefCnt Flags       Type       State         I-Node Path
unix  3      [ ]         STREAM     CONNECTED       1178
unix  3      [ ]         STREAM     CONNECTED       1177
unix  2      [ ]         DGRAM                      1161
```

We are especially interested in the line

```
tcp        0      0 0.0.0.0:9100            0.0.0.0:*               LISTEN
```

It is saying that a service via tcp is listening on port 9100

- And at last enter

```
root@my-ddwrt-router:~# ps | grep p9100d
927 root      1108 S    p9100d -f /dev/lp0 0 -t 5
```

This also indicates that a process p9100d is running looking at port /dev/lp0 which is a printer port

- You don't have to install anything via ipkg or any other script. Everything is installed by default. So if you don't have the expertise to ssh to your router, don't despair, it is only to make sure that your router recognises your printer on the USB port.

To install the printer under Windows, use the following procedure:

Windows 7

- Open Control Panel, Devices and Printers
- Choose Add a printer
- Add a local printer
- Create a new port
- Type of port: Standard TCP/IP Port
- Hostname or IP address: 192.168.1.1
- Make sure that the checkbox to query the printer and select a driver is not checked
- Wait until the detection is done. It will say that the device is not found. Don't despair
- Choose Custom and then click Settings
- Make sure that Protocol Raw is selected and Port 9100 is entered. That will be proposed.
- Leave all other settings also as they were and press OK
- Click Next.
- Choose the printer driver for your printer.
- Click Next
- Give your printer a name
- You don't have to share the printer
- Next
- You can set it as default printer
- Finish

Other

- **http://uis.georgetown.edu/software/documentation/winxp/winxp.network.printer.html**
- **http://docs.info.apple.com/article.html?path=Mac/10.5/en/9031.html**

Don't forget that your routers default address is 192.168.1.1 and its port is 9100

Reverting back to stock firmware

To revert back to stock firmware download the latest E3000 firmware from linksys site, reset you router to defaults from within dd-wrt's webgui, wait, then login and select the stock firmware file and flash, make sure to select "reset to defaults" on the drop down menu when flashing. See **http://homesupport.cisco.com/en-us/wireless/linksys/E3000**. For older versions see **http://www.mediafire.com/linksysfw**