

Linksys WAP54G Hardware Spec**Contents**

- 1 Installation
- 2 MAC ADDRESS CHANGES - redhawk
  - ◆ 2.1 Method 1
  - ◆ 2.2 Method 2 - Works for all WAPs (For V2.0 and V3.X use actual MAC and MAC+1)
- 3 For loading firmware on the WAP54G V1.X=
- 4 For loading the firmware on the WAP v2.0
- 5 For loading the firmware on the WAP54G v3.X
  - ◆ 5.1 Added by redhawk - 11/16/07
  - ◆ 5.2 Added by lerley 29 January 2008
  - ◆ 5.3 Added by rfuhrman 19 April 2008
  - ◆ 5.4 Added by redhawk0 02 March 2009
  - ◆ 5.5 Added by hammy 19 October 2009
  - ◆ 5.6 Added by tmittelstaedt 31 October 2009
  - ◆ 5.7 Added by truedis 25 January 2010
  - ◆ 5.8 Added by aditnsr 27 February 2010
  - ◆ 5.9 C4f 20:49, 16 April 2010 (CEST)
  - ◆ 5.10 Added by Sabryna 8 Aug 2010
  - ◆ 5.11 Added by nogginoid 09 Sept 2010
  - ◆ 5.12 Added by Evan 30 Oct 2010
  - ◆ 5.13 Added by JonnyJE 16 Dec 2010
  - ◆ 5.14 Added by JJFL 14 Jan 2011
  - ◆ 5.15 Added by Scotty 26 FEB 2011
  - ◆ 5.16 Added KaszpiR on 27 Apr 2011
- 6 WAP54G v2.0 Headers

**Installation**

**WARNING** - DD-WRT was not originally intended to be loaded on a WAP unit. It was found that it will run but it is a tricky unit to load and have function correctly. Below are a compilation of methods/instructions to assist you with creating a DD-WRT-loaded WAP unit.

Hard reset does not work on this device so it is not possible to clear the NVRAM using the reset button. This can be problematic if you need to reset the device in order to access it. If this happens you can reinstall the linksys firmware using the tftp method and then reset it.

LOAD AT YOUR OWN RISK.

**MAC ADDRESS CHANGES - redhawk**

If you really want your WAP to have the correct MAC address when it boots up there are 2 methods....one simple but not permanent, and one not so simple but permanent.

## Method 1

For V1.x only On the Administration>>Commands tab enter

```
nvramp set et1macaddr=<your MAC address minus 1 here> (due to the port swap) (i.e. 00:11:22:33:44:54)
nvramp commit
```

Run then Save as Startup....now reboot the unit for the new MAC to take effect.

For V2 units - This unit version has a unique motherboard flag and should be recognized as a WAP on the Status tab.

For MAC alterations on a V2.0- V3.x - follow the same step above except substitute the et1macaddr with et0macaddr and don't use the minus 1, use your actual MAC address. (i.e. 00:11:22:33:44:55)

This will need to be re-entered if you do a hard reset (like when doing firmware upgrades).

### Example of startup script for a V1:

```
nvramp set et1macaddr=00:11:22:33:44:54
nvramp set boardnum=2
nvramp commit
```

### Example of startup script for a V2.0:

```
nvramp set et0macaddr=00:11:22:33:44:55
nvramp commit
```

### Example of startup script for a V3.X:

```
nvramp set et0macaddr=00:11:22:33:44:55
nvramp set WAPver=3
nvramp commit
```

Once the script is run and saved as a startup....power cycle the unit. It should then be recognized as a WAP unit on the status tab.

## Method 2 - Works for all WAPs (For V2.0 and V3.X use actual MAC and MAC+1)

Extract your CFE, edit in your MAC address, et0macaddr = MAC, and il0macaddr=MAC+1. (For V1.x... Use your MAC-1 for the lan\_hwaddr and your MAC for the wan\_hwaddr), then put the CFE back on using the HairyDairyMaid or TJJTAG utility. This method is risky. You could potentially turn your router into a brick. Once this is reinstalled on the unit and the firmware has been loaded, your unit will have its own MAC addresses permanently embedded and will show every time you boot.

**[note]** - for the V1s, search for the embedded text string "hwaddr" using your hex editor. This will find the two MAC addresses that are embedded. Again due to the port swap the LAN MAC address needs to be

entered as MAC-1 and wan\_hwaddr needs to be entered as the MAC for the V1.X only

[note] - my WAP 1.0 required 192.168.1.1 using tftp.exe for the firmware load the first time... my V2.0 and 3.1 required 192.168.1.245 using tftp.exe for the firmware load the first time.

## For loading firmware on the WAP54G V1.X=

**WARNING** - Use only [1] firmware builds on v1.x WAP units. If you try to use the standard V24 you will brick the WAP V1.X unit.

- Has fixed LED displays starting with V24 RC5. - redhawk

- Connect PC to LAN port on WAP
- Configure PC for STATIC IP as 192.168.1.2 Mask 255.255.255.0, Gateway 192.168.1.245
- Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still holding reset button an additional 30 seconds.
- Open Browser, URL = <http://192.168.1.245>
- Login as: Username/Password <blank>/admin
- Navigate to Administration Tab. **Change the DD-WRT xxx\_generic.bin file to xxx\_generic.trx**
- Upload the new xxx\_generic.trx file to the router.
- Wait 5 minutes after it says it completes successfully.
- Unplug WAP unit, plug it back in.
- Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still holding reset button an additional 30 seconds.
- Now use URL = <http://192.168.1.1>
- Go to the Administration>>Commands tab.
- Enter the following

```
nvramp show | grep boardnum
```

*then click on "Run Commands"*

If it returns blank then issue the following commands... if it returns a boardnum=2 then you won't have to.

```
nvramp set boardnum=2
```

```
nvramp commit
```

- Click "Run" button and then: "Save Startup" button. - (only if you had to enter boardnum=2 manually)
- Power cycle the WAP unit.
- Check the Status page... it should now display the unit as a "Linksys WAP54G v1.x"
- Configure as you would any other router.

Power = Power, Diag = Diag or Commit

WLAN - **Link LED is now a Radio On/Off indicator**, Act = Wireless Activity

LAN - Link = Link, Full/Col = Full, 100 = 100

Thanks goes to Eko for making this unit display correctly.

## For loading the firmware on the WAP v2.0

**WARNING** - Use NEWD-Micro build on the WAP v2.0 and 3.X units.

- follow the steps for the WAP v3.x below... except don't include the nvram variable for WAPver=3. The v2 units have a unique board and should be already recognized by the RC5 and later firmware. Eko informed me that there are no special variables needed for the v2 units. [redhawk - 11/16/07]

NOTE: On my V2.0 unit, it has original 2.07 Linksys firmware installed... this FW would not upgrade to DD-WRT. I first downloaded the latest 3.04 FW from the Linksys site and upgraded to it first. Then it would accept the DD-WRT micro\_generic build (renamed to .trx extension) directly from the web GUI in the Linksys pages.

If you receive a error message saying "Unable to downgrade firmware" go to <http://192.168.1.245/fw-conf.asp>, set pull-down menu "DownGrade Header :" to disable and click [apply]. If this setting executed successful you see a message "Your changes have been saved". [ddvelzen - 18/01/08]

## For loading the firmware on the WAP54G v3.X

**WARNING** - Use NEWD-Micro build on the WAP v2.0 and 3.X units.

Use V24-RC5 or later for Reset button function

- Connect PC to LAN port on WAP
- Configure PC ethernet port to *IP: 192.168.1.2, SM: 255.255.255.0, GW: 192.168.1.245*
- Unplug power. Wait 15 seconds
- Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still holding reset button an additional 30 seconds.
- Open your favorite browser (I used Firefox) and go to: **<http://192.168.1.245>**
- Login as:

**User:** <blank>

**Password:** admin

Hit the Administration tab, and upload the MICRO version of the firmware.

- Wait 5 minutes after it says it completes successfully.
- Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still holding reset button an additional 30 seconds.
- Go to: <http://192.168.1.1> in your browser and login with the default un/pw for DD-WRT...

## Added by redhawk - 11/16/07

- Next go to the Administration>>Command tab
- Type in: **[note]** - this is only needed for v3.x WAP units with V24-RC5 and later firmware.

(do not include these next two lines if it is a V2.0 unit...the WAPver variable is not needed except on V3.X units **HOWEVER IT IS VERY IMPORTANT TO USE THE COMMANDS ON A V.3.X UNIT OR YOU WILL LOSE THE RESET BUTTON!**)

```
nvrans set WAPver=3  
nvrans commit
```

- Click on the "RUN" button and then the "Save Startup" button... you want this to run each time it reboots.
- Reboot the router again then configure.

**If you did NOT set the ver=3, and are now locked out of your router, try these instructions from Redhawk0** to get your router working again, and then set the instructions set out above:

- use tftp.exe program....but use the default linksys address to flash it again with a micro\_generic.bin file.
- use tftp at 192.168.1.245 to talk to the unit....set a static IP on your computer first to 192.168.1.10
- Follow the tftp flash instructions in the peacock thread...but use 1.245 for the WAP address.

*redhawk*

## Added by lerley 29 January 2008

I kept getting "upgrade failed" message when trying to update the micro firmware on my WAP54G v3.1 - I ended up doing the following to make it work:

- Reset as above
- Upload micro firmware through web interface and get failed message
- Power cycle router
- Tftp micro firmware to router (still at 192.168.1.245) as per instructions in [Recover from a Bad Flash#Recovering with TFTP](#)
- When router boots, go to 192.168.1.1 and log in with DD-WRT defaults
- Go to Administration - Upgrade Firmware and upload micro firmware again
- Power cycle router

At this point it worked great and I could configure it. Probably still need the nvrans stuff as above...

## Added by rfuhrman 19 April 2008

WAP54v31 hardware, running Firefox on brand new WAP54v31, loading dd-wrt.v24\_micro\_generic.bin ...on upload completion received "upload failed" message ala 'lerley'. My WAP54 was unaffected, I was still in Admin page, so no need to panic.... Simply switched to IE and ran same exact commands at 192.168.1.245, perfect upload 1st try. Then I could later use Firefox for finishing the configuration.

So I assume do not use browser of choice, but rather **use IE for 1st upload** (this is same as suggested for WRT54GL install notes).

## Added by redhawk0 02 March 2009

If you are having trouble reconnecting to your WAP unit after firmware upgrade it could be due to the arp table holding the old MAC address for that unit. Try the trick listed [here](#) ....credit for tip goes to sprocket87...much thanks.

## Added by hammy 19 October 2009

The command referenced by redhawk above is

```
netsh interface ip delete arpcache
```

from the Windows command line. If from Internet Explorer the web GUI becomes unresponsive to button presses, clearing the ARP cache and reloading IE worked fine for me.

On a v3.1 WAP54G with a SST chip and running v24-sp2 micro 10/10/2009 firmware, if I entered

```
nvramp set et0macaddr=XX:XX:XX:XX:XX:XX
nvramp set WAPver=3
nvramp commit
```

into the Administration>Commands box as a startup script, the WAP would erase all NVRAM configuration and corrupt itself, requiring a reboot to access the web GUI or telnet.

What was not clear in this documentation is that only

```
nvramp set WAPver=3
nvramp commit
```

is needed in the startup script and after that the WAP will automatically use its correct MAC address instead of the default WRT MAC.

On my v3.1 (after several bad flashes from OpenWRT and the Linksys web GUI as well as numerous pin 16 shorts--in other words, who knows how typical this v3.1 is of the model), just the WAPver=3 command would still result in a wipe of the NVRAM configuration and general mayhem until a reboot. However, using

```
nvramp set et0macaddr=XX:XX:XX:XX:XX:XX
nvramp commit
```

## Linksys\_WAP54G

worked fine for restoring the proper MAC address while keeping the NVRAM configuration intact.

### **Added by tmittelstaedt 31 October 2009**

I have both a WAP54G v3 and WAP54G v3.1 I've upgraded both of them by loading the latest Linksys firmware v3.04.03 on them, doing a factory reset from the Linksys firmware, then loading the current DD-wrt firmware (v24-sp2 micro build 13064) With both units, putting the

```
nvramp set WAPver=3
```

in as per the above instructions causes the unit to reset to default settings. This is on clean units that have never had anything other than Linksys firmware on them, were 30/30/30 reset before loading dd-wrt, etc. Also, both units refused to take the dd-wrt firmware using the web upload feature of the Linksys firmware, both had to be tftp uploaded. Linksys must have added some sort of check for upgrade firmware.

Also, both have to have the

```
nvramp set et0macaddr=XX:XX:XX:XX:XX:XX  
nvramp commit
```

saved as the startup script or the MAC address will not be correct.

Lastly, there is one other idiosyncrasy of these units that is important. The dd-wrt firmware will turn these units into NAT routers, similar to a 2MB flash WRT54G. However, the wireless interface and the ethernet interface are reversed. The firmware considers the wireless interface the WAN interface, and the ethernet interface the LAN interface. Thus, you cannot substitute one of these units for a regular WRT54G in NAT mode. You CAN use it as a gateway router, routing between subnets with NAT switched off, or as an access point, or as a LAN2wireless bridge.

### **Added by truedis 25 January 2010**

I have a WAP54G v3.1 and I simply uploaded the latest version using IE and the stock firmware web interface without even doing factory defaults on the old firmware and it worked just fine. I didn't have to input any of the commands - I'm using it as an access point but wanted more control over MAC filtering, etc, and everything is working great. It was a lot easier than I expected based on all of the instructions on this page.

### **Added by aditnsr 27 February 2010**

I have a WAP54G v3.1 loaded with v24 preSP2 (Build13064). Just like [tmittelstaedt] said, initially, the wireless interface is considered the WAN interface, while the ethernet is considered the LAN. I managed to reverse it by changing the WAN port assignment. In the web interface, go to Setup -> Networking -> Port Setup. I changed the WAN port assignment twice, first to br0, and then change it again to vlan0. After that, the ethernet is now the WAN, and the wireless the LAN. Not sure if this will work for others though.

Added by hammy 19 October 2009

## **C4f 20:49, 16 April 2010 (CEST)**

For ver 3.x I bricked my wap54g when I followed the instructions

1. Unplug power. Wait 15 seconds
2. Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still hold

I suspect that this is either a bad thing to do if the device has acquired an IP already or the power cycling itself in this manner is damaging. I have been unable to get any response from the device in any way and it was working 5 minutes prior to this attempt with latest manufacturer firmware.

I would be more than happy to see if this can be recreated/resolved however the device suffered damage and need to fix the power plug on the PCB.

## **Added by Sabryнна 8 Aug 2010**

I have found that version 3.1 retains both WAPver and et0macaddress nvram values, at least if entered using a telnet connection. These values are still there even after a configuration restore. So just after the 30/30/30 reset procedure I have started telnet to 192.168.1.1, changed WAPver and et0macaddress then committed. Then I have rebooted the WAP54G and started the usual configuration. No need to set up the startup commands that corrupt nvram regularly.

## **Added by nogginoid 09 Sept 2010**

I loaded the latest and greatest to my WPA54G v2.0 via the web interface according to 'Method 2'. Applied DD-WRT v24-sp2 (08/07/10) micro r14896, after upgrading the Linksys firmware; going from the factory r2.07 to r3.05.03 (one can also use 3.04.03). I upgraded via this route as I read others had trouble upgrading from v2.0x. Past experience told me to do all this using IE :). In my experience, a lot of trouble uploading firmwares to linksys devices are symptomatic of 'product features' that pop up when using a standards compliant browser. Isn't it great when GPL code requires IE? (for me that means requires windoze in a VM :p (sorry- that was mean after all DD-WRT offers us!))

I reset to factory default settings in 3.05.03, then loaded v24-sp2 r14896 as described above and all went swimmingly following the 30/30/30 reset, so here I am messing around trying to reconfig the interfaces as it thinks its running on a WRT unit. Sweet! Currently, I can't seem to get v10 running, w10, off to RTM... thanks to all for the painless experience!

Note to Ed: The line in red at the top warning about pressing reset seems well and truly outdated now.



## Added by Evan 30 Oct 2010

This part of the 3.x section doesn't make sense to me:

- Unplug power. Wait 15 seconds
- Press and hold Reset Button on WAP unit for 30 seconds, unplug unit, Plug back in still holding

Is this supposed to mean that I unplug the power, wait 15 seconds, PLUG POWER IN, and then proceed to follow the 30/30/30 procedure?

## Added by JonnyJE 16 Dec 2010

I followed the steps exactly as instructed and I was unable to flash via linksys web based firmware upgrade. I received a failed upgrade message. My heart started to race as I was unable to view the web based interface anymore. I started to read comments on this wiki and Lerley's post helped me out a lot. I was able to flash my WAP54G v3.1 firmware to dd-wrt by recovering via tftp.

After successfully flashing my WAP something must of happened after changing a setting (I think it was when I toggled it to bridge mode and that is what triggered it). It randomly didn't save the settings after applying the changes (after it restarted) and then it acted like I just installed dd-wrt again (it was prompting me to set a username and password again). So, I set the credentials like I did before and then it hung at refreshing the page for the longest time and became unresponsive.

Tftp'ing to the device no longer worked, I was not receiving any pings, nothing. The reset button also did not work, as I think the script that enabled the reset button to work got cleared from startup when it randomly lost all settings. I saved the script to enable the reset button before this all started, so that is why I have come to this conclusion.

I would also like to mention that the power and link LEDs were also stuck on, they would not blink or anything after power cycling and hard resetting (30-30-30'ing) several times. Now I started to freak out, knowing that I have bricked my WAP54G v3.1... After spending hours googling around trying to find some sort way to unbrick it I came across the way to short the flash memory pins 15 & 16 using the [Linksys WRT54G Revival](#) method. So I opened up my WAP54G v3.1 and located its flash memory (which is located on the bottom of the WAP54G v3.1's circuit board). After shorting the pins with a paperclip, I was able to receive pings! I could now connect to it again via the web interface. I was literally jumping for joy and praising God.

I hope that this helps someone here if they unfortunately managed to bricked their WAP54G.

## Added by JJFL 14 Jan 2011

I have WAP54G v3.1 and followed the instructions. Downloaded the firmware "dd-wrt.v24\_micro\_generic.bin". When I tried to upgrade the firmware from the Admin page it ended with error. I tried 30/30/30 rule to refresh the firmware, but no success. Now I don't see the Green light for activity and can not access admin page at 192.168.1.245 anymore. Please help, I am freaking out here.....Thanks

## Added by Scotty 26 FEB 2011

So I put the wrt firmware on my linksys WAP54g about a year ago. I have since forgot my username and password... EPIC FAIL! I can not reset the unit now I've tried the 30/30/30 method and telnetting into it and ssh but they both require the login and password so no good there. Is there a jumper on the greenboard I can trip to clear out the memory that holds the user name and password if I take the unit apart? DD-WRT v24-sp2 (01/01/09) micro

## Added KaszpiR on 27 Apr 2011

I had issues with update of the device on WAP54G V3.1 - after updating to dd-wrt from stock firmware, I got constant blank pages with apply.cgi - even 30/30/30 didn't work as it should. I've noticed that Status page on the web interface showed that Router Model is listed as Linksys WRT54G, which is incorrect. Any changes to execute nvram set WAPver=3 via web interface failed aswell, actually **nothing** could be saved via webinterface.

What I did was a telnet solution: 1. Telnet to the device with your favourite program (example with basic windows telnet client)

```
telnet 192.168.1.1
```

2. Enter user and pass when prompted. If you have not changed it then default is root/pass. After succesful login you should be in router console. (Note for windows telnet users, pressing ctrl+backspace works as backspace)

3. Enter below commands, notice that quotation marks, also each line ends with enter:

```
nvram set WAPver=3
nvram rc_startup="nvram set WAPver=3
nvram commit"
nvram commit
reboot
```

4. After a moment the device showed in Status page in web interface that it is running settings for Linksys WAP54G V3, finally. Unfortunately I still recieved blank apply.cgi pages, so I was a bit irritated.

**5. I suggest leaving device idle for about 5 minutes, then turn it off for 5 minutes and turn on again - it should be running correctly from now on.**

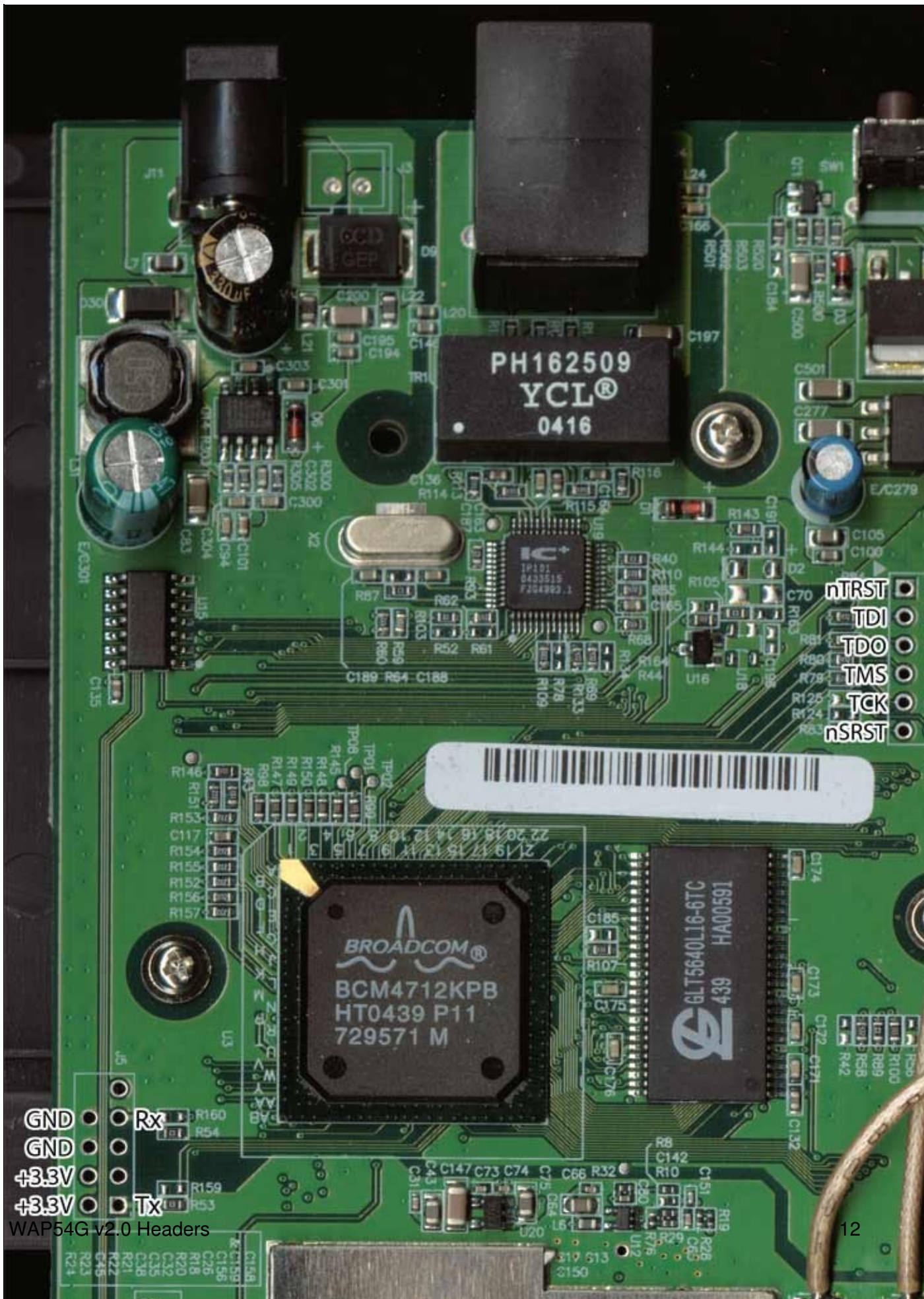
In reality I left device idle for 5 minutes because it started to react weird - blank pages, auto restarts or even symptoms of bricking and so on. I had other work to do so I decided I will leave it. After finishing my work I had to go back home, so I took the device with me to experiment with it. After reaching home and plugging on device into the power it staret to react in the web itnerface as it should.

That's why **I assume it needed some time and few extra reboots to set up final scripts** and then it started to wrok like a charm. Hope that hepls the others.

Later I will try to install newer build.

## **WAP54G v2.0 Headers**

- Serial: J5
- JTAG: CONN1



GND  
GND  
+3.3V  
+3.3V

Rx  
Tx

WAP54G v2.0 Headers