

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

Thursday, May 20, 2004

IBM Thinkpad T42p

This should be a fun toy when it shows up. I ordered a T42p today with the 15" 1600x1200 screen and a Dothan 1.8GHz CPU. Kept the RAM and HD low and will just add more later. Crucial doesn't list it yet, but I figure it uses DDR PC2700 non-parity RAM just like the T41p. Now to find a decent 80G 7200 rpm notebook drive to toss in it.

I did consider a Powerbook for a while, but I am too used to Linux and I really am more comfortable on a Thinkpad. One of the big draws of the Powerbook was the DVI-out on it, but with the Thinkpad mini-dock which is only \$89, you get that anyway, and it's not like I will be tossing my 20" LCD into my backpack and bringing it with me, so the dock can just live permanently by the LCD for a very nice dual-headed workstation when I am working from home.

By the way, ordering this thing was amazingly painful. The ordering web site is/was completely messed up and there was no way to click your way to it. Had to call and have a human do it for me. If you are looking for one, I would suggest finding someone who works at IBM who will let you use their friends+family EPP discount and go in via www.ibm.com/shop/epp or if you own some IBM stock you can use the Shareholder Purchase Program at www.ibm.com/shop/us/spp to get a couple of hundred dollars off your price.

June 23rd Update: It finally arrived! Of course I am out of town so I can't play with it yet. Frustrating.

July 5th Update: Finally back in the country and have started playing with this beast. It's the same thickness as my old T20, about an inch wider and a bit over half an inch taller. But that Flexview display is amazing. And no, 1600x1200 looks just fine on it. I never really understood the argument that a display could be too small for a high resolution. Just set your font size to your liking. The higher resolution means your anti-aliased fonts have that much more definition to them making them clearer and easier to read which is exactly what you need on a "small" display.

I am waiting on another 512M of RAM and a speedy 7200 RPM 7K60 drive to install Debian on. I'll keep the 5K80 that came with it as a secondary XP drive that I can pop in the Ultrabay the one or two times a year I actually use Windows.

July 10 Update: Debian has gone onto this thing. It installed pretty smoothly. I always use this 31M XFS boot iso for installing Debian these days. To do a network install just remember to specify "e1000" when you get to the part that asks you which extra drivers to load. Here is my .config in case you are curious. I ended up using ATI's drivers for the FireGL T2 (basically a Radeon 9600 card) that is in it. There are also open source drivers ([here](#)) which work nicely, but the 3D acceleration wasn't very good. If you follow these excellent instructions it is easy to get the ATI drivers going, and you will have very fast accelerated 3D. Make sure you build your own modules instead of trying the precompiled ones he lists. I had a world of problems with those, but as soon as I built my own against my 2.6.7 kernel everything started working. I used the "fglrxconfig" program to generate my XF86Config-4 file for just single-headed 1600x1200 for now. Need to play more with the port replicator and dual-headed stuff and also come up with a way to reliably connect to 1024x768 projectors. I am getting around 1785FPS from glxgears and 380FPS from fgl_glxgears (default window sizes). Offscreen fgl_glxgears runs at 1125FPS.

Sound works fine with the snd_intel8x0 driver, and the built-in a/b/g wireless works nicely with the madwifi driver. I use apt-get to grab it via this entry in my /etc/apt/sources.list file:

```
deb-src ftp://debian.marlow.dk/ sid madwifi
```

Someone in the comments mentioned problems with pcmcia stuff, but I haven't seen any issues. Anything I plug in comes up right away.

Dual-booting to WinXP sitting on the original drive in the ultrabay worked on the first try. I added this to my /boot/grub/menu.lst file:

```
title Windows XP
map (hd0) (hd1)
map (hd1) (hd0)
rootnoverify (hd1,0)
chainloader +1
```

The big thing I still need to work more on is ACPI and getting it to suspend and wake back up. It suspends perfectly right now, but it just won't come back out of suspend which makes the fact that it can suspend much less interesting. Another interesting problem I hit was that if I used the Radeon Framebuffer to get a cool-looking console then the fglrx ATI driver would crash the system on switching between X and the console. If I don't use the framebuffer for the console everything is fine. Haven't tracked down a solution to this one. For now I just use the vesa framebuffer for the console which works well.

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

July 17 Update: I spend half my life on planes and the other half presenting. I haven't found any way to make the former easier on me as I absolutely hate flying, but for the latter I trawled the Net and came up with an idea by Klaus Weidner for running a vncserver and then a viewer onto that server session both on the local lcd and on the external vga port. That means that now when I present I can have the contents of the projector in a window on my desktop. This will be very nice, especially for my duller talks as I can read email or irc while presenting without people seeing that. First, here is my XF86Config-4 file. Note the dual fglrx device sections and the dual screen sections and finally the single and dual ServerLayout sections. Unfortunately X is quite unhappy starting up with the dual layout if nothing is connected, but you can check that with a tpctl call. I use this little startx wrapper script:

```
#!/bin/sh
if [ `tpctl --id | grep "monitor type" | cut -c41` != 0 ]; then
    startx -- -layout dual;
else
    startx -- -layout single;
fi
```

So I just need to restart X to have it automatically figure out if the second display should be enabled or not. Next, to run vncserver and the viewers along with a window manager (metacity) and a panel I use this script:

```
#!/bin/sh
PWFIL=$HOME/.vnc/passwd

vncserver -geometry 1024x768 :3
sleep 1
xvncviewer -passwd $PWFIL -shared -fullscreen -display :0.1 :3 &
x2vnc -passwdfile $PWFIL -shared -east localhost:3 &
xvncviewer -passwd $PWFIL -shared :3 &
DISPLAY=:3
metacity &
gnome-panel &
```

As far as my suspend problems go. The problem is the ATI fglrx driver. I would have to switch back to the radeon driver but then I would lose tv-out and some 3d-performance. Probably not a bad tradeoff actually.

Posted by Rasmus in WIFI Toys at 20:07

Gee, that's a nice resolution. I've got a Thinkpad R40 with a 15" that does 1400x1050, which I thought was big.

I dual boot with Debian, and have found that most of the hardware worked out-of-the-box, especially with the Sarge/new Debian Installer discs and a 2.6 kernel. What's the hardware support for the T42p like?

And, to top things off, I got a WRT54G today, which is how I found this site. Now to read all your articles, and get the MadWIFI driver for the lappy going.

See you at LCA next year.
Anonymous on May 21 2004, 01:58

As far as I can tell everything is supported under Linux as long as you stay away from the Intel Cetrino wireless crap and get the IBM a/b/g mini-PCI option instead. Not sure about the modem and bluetooth, but I don't recall the last time I used a modem and I don't have any bluetooth devices, but I bet someone out there will make that work too.

Anonymous on May 21 2004, 10:41

I just ordered the 14" version of the t42p and I am anxiously awaiting delivery. The 15" is above the 2,5kg maximum mark I set for my laptop purchase. Hope you are coming to LinuxTag this summer again, then we can share experiences.
Anonymous on May 28 2004, 15:53

The Centrino is no longer crap as there now are 100% non-binary core, GPLd, non-kernel-tainting, drivers available and under very fast development by Intel themselves.

For the B/G card available with the T42s:
<http://ipw2200.sourceforge.net/>
For the older B only card:
<http://ipw2100.sourceforge.net/>

If the 2100 is any indication, the 2200BG should have fully functional drivers within 4-6 weeks.

And futher, the IBM A/B/G card uses the crap madwifi driver that has a tainting binary core.

BTW, I ordered a T42p (2373-KUU) with the 14.1" screen and the Intel B/G Centrino. Nice and lightweight.
Anonymous on Jun 4 2004, 14:00

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

14.1" vs 15" T42s side-by-side pictures.

http://forum.tt-hardware.com/ultimatebb.cgi?ubb=get_topic&f=11&t=012691&p=8#000194
Anonymous on Jun 4 2004, 15:42

Yes, I noticed the Intel announcement after I ordered. I am assuming I can pick up a 2200BG mini PCI card later if these new Intel drivers prove to be solid. Not worried about that part. I have a small army of wireless cards lying around. The big deal for me was that 15" Flexview display. It is an incredible display which I am more than willing to give up a slight size and weight hassle for. It's lighter and thinner than my current T21 and this thing has been around the world with me a dozen times.
Anonymous on Jun 5 2004, 00:28

Arggh. After a painful 4.5 weeks, my order status now says "Customizing\Packing".

Intel must be turning out the Dothan CPUs at a glacial pace. At least the 755s. I haven't heard of anybody receiving one yet.
Anonymous on Jun 23 2004, 19:24

The modem worked without any problems under SuSE 9.1 so it should be doable with most other recent distributions.
Anonymous on Jun 24 2004, 04:26

How do you like the resolution on that... - my guess is that 1600X1200 is too big for a 15" display... :/

I'm asking because I'm getting one my self, but I'm a bit uncomfortable buying it when i havn't seen the display...
Anonymous on Jun 27 2004, 10:04

I've been playing with my new T42p for the past few days and have found a problem. :(

PCMCIA devices don't work unless they are inserted at boot time.

I'm using both Debian Sarge and Fedora Core 2. I've tried upgrading to the 2.6.7-mm5 kernel and the newest pcmcia-cs release.

Under Windows it works fine.

Others are seeing this problem too.

https://bugzilla.redhat.com/bugzilla/show_bug.cgi?id=126278
Anonymous on Jul 4 2004, 16:23

Try `/etc/rc.d/init.d/pcmcia stop/start` and see if that makes it recognize new devices.
Anonymous on Jul 5 2004, 11:59

Doesn't work. Hot plugging devices triggers no action. If I manually run `'cardctl insert 1'` then the device is detected, but any commands that access the device hang. If the devices is inserted at boot time, things appear OK.
Anonymous on Jul 5 2004, 21:22

I run my new T42p with SuSE 9.1, 1400 x 1050 just fits me well. I have a T30, T20 and 770E as well and like the new one much better. But I am furious about having another new format for the drive bay ...

Still fiddling around w. some problems

- suspending does not work at all - no clue so far.
- tpb = Thinkpad Buttons installed, with latest source. Works nicely.
- tpcctl = Thinkpad Control also installed from latest source. Claims that system is invalid for standby/suspend :-(
- KDE 3.2 has a nasty problem (NOT T42p related): My nice old office suite Applixware 5.0 crashes due to some X11 protocol error in the combination of the KDE window manager, the KDE kicker task bar and applix. Ugly workaround involves changing the window manager twice ... :-(
- WLAN works almost nicely. The latest madwifi driver still has problems in keeping a permanent connection to my access point - every few seconds or so the connections goes dead. The access point itself can do 22 MBit/s (and does so quite well with my other boxes).
- Preliminary solution to connect to 1024x768 projectors is the use of scpm. In my GRUB boot window a key shows up to select the hardware configuration - but thi sis unsatisfactory. In my old T30 I had managed to get X11 running with different resolution internally/externally

Anonymous on Jul 12 2004, 21:06

Hi, how did you get the open source drivers to work ? I am on Mandrake Cooker with X.org Xserver, so I cannot just take the Debian packages. For me the radeon driver work fine, however without DRI - it says that on FireGL T2 it is not supported yet :-(

I would love to sacrifice a bit of the performance of the ATI drivers (which suck, IMHO - the performance is much, much worse than in Windows) for the ability to suspend the machine.

Could you point me in the right direction where the good DRI drivers grow ? :-) Also some clue how to compile X would be nice, I never tried it before (however I compile plenty of other things).

Thanks!

Anonymous on Jul 19 2004, 14:02

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

See <http://dri.sourceforge.net/cgi-bin/moin.cgi/>
and
<http://dri.freedesktop.org/~dri/snapshots/>
Mandrake doesn't have xserver-xfree86-dri-trunk packages?
Anonymous on Jul 19 2004, 14:07

No, Mandrake does not have unstable DRI in the repositories. They have such policy.

BTW, are you sure that the driver really works for FireGL T2 in 3D mode ? Wherever I looked, everything says that the 3D is not supported on anything higher than Radeon 9200 and T2 is 9600 :-)

I will try to build the thing and we will see what happens ...

Jan
Anonymous on Jul 20 2004, 16:18

Hmm, this is interesting. I recompiled the CVS version of DRI according to the Wiki, but no go:
"Direct rendering not yet supported on Radeon 9500 and newer cards". 2D works fine, however that I had working before as well.

I do wonder how you managed to get the 3D working with the open source driver, because I looked into the source and there is a hardwired check, whether the chipset is anything higher than NV300. If yes, then it disables DRI and outputs that message.

I will try to diff it against the Debian package, perhaps that one has some unofficial patch or something.
Anonymous on Jul 23 2004, 14:51

OK, I checked the Debian drivers and they have the DRI disabled as well!! If it worked for you, then you either used the proprietary driver and didn't notice it or you are pulling my leg :-(I cannot explain it otherwise.
Anonymous on Jul 23 2004, 15:01

Hi... going to buy a T42 with a 15" 1400x1050 SXGA screen. Can anybody comment on how it compares to the other available options... (note: this was on speculation that the T40's usual 1024x768 screen didnt hold a candle to the SXGA+ 14" screen. Thanks!
Anonymous on Jul 28 2004, 23:02

How does 800x600 look like on the screen? Is it blurry as other interpolated resolutions, or is it sharp since it can use a simple algorithm (half the res on each axis)? That would be a dealmaker for me...
Anonymous on Aug 9 2004, 20:28

How does 800x600 look like on the screen? Is it blurry as other interpolated resolutions, or is it sharp since it can use a simple algorithm (half the res on each axis)? That would be a dealmaker for me...
Anonymous on Aug 9 2004, 20:28

i'm waiting paitently for the thing i ordered.... paitence can last only so long....and man, has it been long.... i hate flying too...who doesn't?
Anonymous on Aug 10 2004, 16:23

Not sure why you care what 800x600 looks like when you have a 1600x1200 display, but I flipped over to it and it looked ok to me. A bit chunky, of course, but sharp and no interpolation artifacts that I could see.
Anonymous on Aug 10 2004, 16:49

Thanks for checking it out! Actually 800x600 is good on 15" to show a website to a group of people or for people with bad eyesight. I found that increasing font sizes for LCD's with high dpi count never really works, especially for websites (sometimes they just break, and images are not scaled in IE). Having a low resolution on a large display is the best for those with impaired eyesight. At 1600x1200 my eyes would probably not want to work for more than 5 minutes on it ;-)
Anonymous on Aug 10 2004, 18:33

I still have the PCMCIA issue where cards I insert after boot are not automatically detected.

Windows XP works fine as does Debian Stable (woody), so I don't think it is hardware related.

Fedora Core 1/2, Debian Sarge, SUSE 9.x all exhibit the problem.

Yeserday my coworker ordered a T42 with the 15" screen. When it arrives I'll see if I can duplicate the trouble.
Anonymous on Aug 25 2004, 09:57

Could you check the module used to make the modem work ? There doesn't seem to be any other success for the modem on a T42 on the net and I'd like to avoid buying the linuxant one.
Anonymous on Aug 31 2004, 06:32

Have you filed a Debian bug report on the pcmcia-cs package?

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

Anonymous on Sep 2 2004, 06:53

Have you been able to get the rig to run in 1600x1200 on the DVI (in WinXP)? I was able to find some hack for some drivers for my T40p but the same hack did not work for Win2003 not does it work for XP on T41p or T42p.

wondering if you have the same problem.

Anonymous on Sep 5 2004, 14:13

I haven't tried it, but next time I stick my XP drive in the Ultrabay I'll give it a whirl.

Anonymous on Sep 5 2004, 16:17

But it works fine using the T42p, the thinkpad doc, DVI running 1600x1200 running linux?

Someone at IBM support said that this was just not a supported resolution for DVI on these docs.

Anonymous on Sep 7 2004, 02:37

Hi mlambie, Did you install Sarge on your R40 using the new installer with kernel 2.6? I have not succeeded yet to do it because the partitioner (parted) does not manage to treat the protected area on the HD properly. Did you have the same problem, and how did you solve it?

Anonymous on Sep 15 2004, 01:45

I have been able to get it to work at 1600x1200 under windows by installing Dell's driver for ATI cards. I have not been able to get it to work under Linux, however. If somebody has, I would LOVE to hear from them.

Anonymous on Sep 25 2004, 11:21

PCMCIA Saga continues...

My co-workers' T42, with a 15" LCD arrived (another co-worker has ordered one too).

He also has the no-activity-on-pcmcia-insertion problem too.

We have found a very interesting data-point though, and maybe others here can try it out.

If the eth0 (the onboard 10/100/1000 Intel NIC) has an IP address/is "up", THEN the PCMCIA works correctly.

If eth0 is down, then inserting a PCMCIA causes no activity and no auto-detection. Sometimes a manual "cardctl insert" will work.

This is very odd, but 100% reproducible here on our two laptops. The thing I saw before with it always working with Debian stable was likely just this as I had a network cable plugged in then.

Can anyone else with a T42/T42p reproduce this?

Anonymous on Sep 26 2004, 22:03

T42/T42p PCMCIA fix in 2.6.9-rc3

http://linus.bkbits.net:8080/linux-2.5/cset@4159eac6SsXcvCc_x3jv5F_LzGHONG?nav=index.html|ChangeSet@-2d

[PCMCIA] Add device ID for TI4520 to yenta_socket table.

This fixes the non-functional PCMCIA problem reported on LKML by Dax Kelson.

Signed-off-by: Russell King

Anonymous on Sep 29 2004, 21:14

T42/T42p no-detect-PCMCIA-insertion problem fixed with 2.6.9 kernel release.

There was a legit issue, I wasn't just me being weird. :)

Here is is the kernel changeset:

http://linus.bkbits.net:8080/linux-2.5/cset@4159eac6SsXcvCc_x3jv5F_LzGHONG

Anonymous on Oct 21 2004, 18:00

Happy owner of a t42p, figured out some of the issues...

fglrx vs. suspend -- the problem is indeed with fglrx, but it can be circumvented by turning DRI off in XF86Config-4 -- I like the fglrx features, so I can sacrifice the DRI for the time being.

Dual head; one for presentations (I present a lot); go to XF86Config-4 file, change "Option MonitorLayout AUTO, AUTO" to "AUTO, CRT" and XFree won't complain about second head missing anymore.

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

Beautiful machine -- add second battery, load madwifi, a little scripting, GRPS modem card, and it's the ultimate road warrior tool.
Anonymous on Oct 22 2004, 17:17

is the t42 the exact same thickness as the t41, or a little thicker?
Anonymous on Nov 10 2004, 09:38

I agree with you completely, Markus. There is no such thing as too high resolution or too small screen. Seems like a nice machine, although I would ideally want 1600x1200 on the 14". I've been running 1024x768 on laptops for six years now, something needs to change!

//Peter
Anonymous on Nov 17 2004, 15:21

I just purchased a T42p and it is an amazing machine, very much complimentary to this review. Its just a basic, very well built laptop with an amazing screen.
Anonymous on Nov 20 2004, 14:48

I have made a link to your report in the TuxMobil Linux Laptop and Notebook Survey at TuxMobil.org.
Anonymous on Nov 21 2004, 09:55

I installed SUS 9.1 personal and built in wireless cisco mini-pci just does not work. I have tried everything. I ran the built in YAST tool and put in SSID etc. and yet nothing. I have a dual boot laptop and winxp works fine. boot into suse and nothing. Suse has built in wireless tools (iwconfig). I've seen many reference to other drivers, but I'm not sure if I need to install, b/c in the YAST tool it recognizes the wireless network card. Any suggestion would be appreciated.
Cheers!
Dave
Anonymous on Nov 25 2004, 12:11

I have Suse 9.1 Pro instaled but upgraded to kernel 2.6.9 on a IBM T42P and it works great. Inorder to get Cisco card to function you have to configure it in two places. Once in YAST and the other through the Cisco ACU. For some reason it will not work if I do not do one or the other, especially if I am using LEAP.

Good luck...BTW...I upgraded to 2.6.9 because the Cisco ACU GUI would crash with the default kernel. I later read that the default kernel with Suse 9.1 was broken.
Anonymous on Nov 26 2004, 13:22

Hello,
I have a thinkpad T42p, a mini-dock station and a 19" external LCD. I have some problems with the DVI output of the mini-dock. When I launch a X server, the display is switch to the laptop screen or nothing is display. The strange thing is that all is wotking well with the VGA output (mini-doc or laptop). My laptop is powered by a debian, a linux kernel 2.6.10, a XFree86 4.3 server and the fglr driver from ATI. Any ideas would be appreciated.

Thanks,
cedric.
Anonymous on Feb 4 2005, 05:10

Hello there, I have IBM ThinkPAd T21 with 14" display, when resolution set to 1400x1050 (with is max for this 14" display) there is no prob but when i try other resolution such as 1024x768 or 800x600 or 640x480 it doesn't fill all screen and there is a black border around.
Has anyone solved this problem before?

thanks.
andy.
Anonymous on Mar 23 2005, 21:40

I forgot to say that my video driver is just updated for S3 Savage IX video adapter with 8mb video ram.
Anonymous on Mar 23 2005, 21:42

Possibly caused by a BIOS setting. Look under HW Expansion in the bios settings or hit fn-f8 on boot (which toggles hw expansion on/off)
Anonymous on Apr 4 2005, 17:55

I am new here. I hope someone can help me here. I got a IBM T41 that does not come with any wireless mini pci card build in. So I got 2 options, either install a mini pci wireless card in my notebook or use a PCMCIA Wireless Card.

But do all PCMCIA Wireless Card work on my T41? What about the Linksys Wireless G PCMCIA Card? Anyone got experience in it?

Blog Export: Rasmus' Toys Page, <http://toys.lerdorf.com/>

Anonymous on Apr 10 2005, 07:40

I have the same problem with Ubuntu, DVI just wont work (MiniDock). Any suggestions?
Anonymous on Jun 10 2005, 02:36

hmm I have the same problem....does anybody know a distribution where it works?
Anonymous on Aug 31 2005, 06:51

Thanks rasmus. I was wondering how I'd configure dual head.
Anonymous on Oct 6 2005, 14:58

Thanks a lot Rasmus! I have a T42p myself that I run Debian Etch on. I really liked your technique of using vnc with a secondary monitor/projector. I set it up too just now and will hopefully use it for presentations from now on.

There's one small problem though. Normally I just have a second monitor plugged in, and can move my cursor back and forth between screens (I'm not doing anything fancy, just using the radeon driver along with a dual-head ServerLayout). When using vncserver, though, instead of the cursor stopping at either end of the set of screens, it loops back around several times before eventually being blocked by the edge of a screen. I'm pretty sure this is the result of the cursor switching screens both when I move back and forth and when entering and exiting the xvncviewer window. It becomes nearly impossible to remember where I am.

Is there any way I can isolate my cursor to my thinkpad's screen so that entering the xvncviewer window is the only way that I can enter the projector's screen? I know this is an old page of yours, but maybe you have some advice. Thanks again for the wonderful write-up!
Anonymous on Mar 26 2008, 23:06