

ANODE

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Editor's Comments

Volume 7 Issue 1 August 2006

I hope you wished your pc "Happy 25th Birthday" on Saturday the 12th.



Several 'bad' things happened last month...

Windows 98 came to the end of its support life.

Windows had 23 patches to fix 'bugs' in one month.

We got burgled.

Unfinished Business

The Beacon/Fox needs a crystal of half the output frequency. We need 145.500 / 2 and 145.550 /2, so if you have any old crystals lying around,

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Linux for Hams - more hints

Special points of interest:

- Contact details on back page (updated)
- New email address for Anode and ZS6WR. See back page

Command	Description	Usage example
cd	Change directory	cd subdir
pwd	Print working/current directory	pwd
mkdir	Make directory	mkdir subdir
rmdir	Remove (delete) directory	rmdir subdir
ls	List directory contents	ls *.img
cp	Copy (duplicate) file	cp a.pdb b.pdb
rm	Delete file (permanently!)	rm a.pdb
mv	Move (rename) file	mv a.pdb b.pdb
cat	Concatenate (list) file to screen	cat a.pdb
more	Page through a file	more a.pdb
head	Show top of file	head a.pdb
tail	Show end of file	tail a.pdb

Home directory is the top of your personal file tree. Abbreviations for home are "~" for your home and "~user" for the home directory of "user". The direc-

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Editors Comments & News

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please take a look at them. If you have anything close by in frequency, I will also be grateful.

In a similar vein, the UHF portable shown below can be crystallised for use on the West Rand's UHF repeater. It uses a 21.4MHz I.F. and a X3X3 (times 9 overall) multiplier chain. So any crystals in the 46.4MHz range ?

The transmitter also uses an overall 9 times multiplier chain. So for a transmit frequency of 431.4MHz, we need a crystal of 47.9333MHz.

These 'portables' could be used for close in operation. Or for special events. We have a large supply of these units. Some of which are functional.

If anyone has any information regarding these REPCO/PYE Telecommunications portables, I would be very grateful if you could let me have it. JB

{—}

Hi All

Last week a gentleman arrived at our offices requesting to have a radio installed in his taxi, when he produced the radio and I saw that it was a complete 706 with part of the mounting bracket obviously broken and still attached I confiscated the radio. He told me he had bought it from someone for R 450.00 (!!!!!!!)

I would like to give the radio back to the person who lost it.

It is an early import and was not sold in SA, it also has a very rare extra feature module fitted to it.

If the owner contacts me with proof of purchase and a copy of the serial number, we will be happy to return it.

Please would you all assist me in spreading the word amongst other clubs and also to mention it on the bulletins

Many thanks
73

Kind regards

Steven J. Baynes

Technical Director

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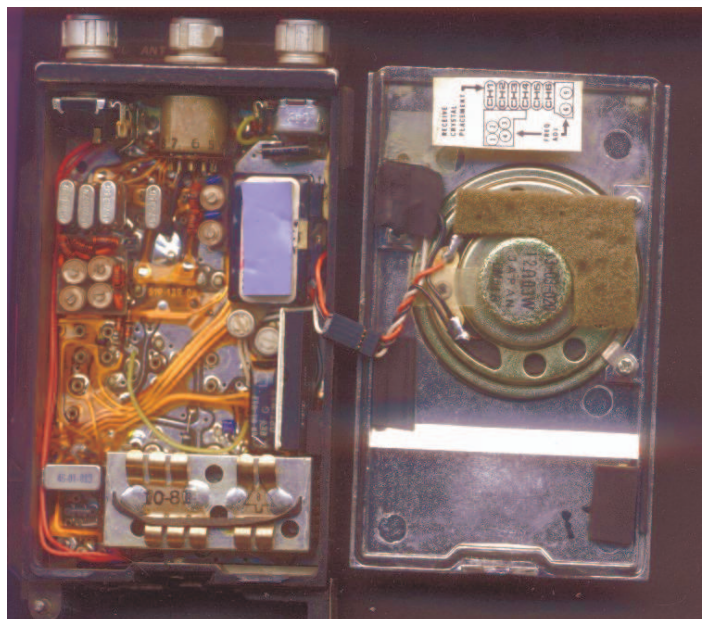
{—}

Homebrew A 4 To 1 Balun

By N1HFX

Many modern HF transceivers come fully equipped with built in tuners. While these tuners are great for changing bands, the manufacturers left out a very important accessory; the 4 to 1 balun. With out a balun the transceiver can only feed an antenna which uses coaxial cable. While this may be satisfactory for some operators, this is a real problem for those of us who prefer the super low loss ladder line. The only other alternative is to buy an external tuner with a built-in balun

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Editors Comments & News

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which is really absurd after spending the additional money to have one built into the radio. Fortunately, a 4 to 1 balun can be easily home brewed as illustrated in Figures 1 and 2.

Figure 1 shows a bifilar winding on a toroid. The toroid should be type 2 (red) material and can be any of the following sizes but the number of bifilar turns should be adjusted accordingly:

The exact number of turns is not critical but the numbers listed in the preceding table should yield optimum results. It is possible to exceed the power ratings listed above but the performance of the balun may be degraded during high SWR causing heating of the core.

Toroids of this type are available from Palomar Engineers, P.O. Box 462222, Escondido, CA 92046 (1-800-883-7020). If enough inquiries are made, the author will make a limited number of toroids available at RASON meetings for those who hate mail order. The author will even wind the toroid for the faint of heart.

The balun should be housed in a suitable metal enclosure such as those available at Radio Shack. Use a SO239 or BNC connector for the unbalanced input. Nylon binding posts such as RS 274-662 work just fine for the balanced output.

DE N1HFX

TOROID	NUMBER OF TURNS	POWER RATING
T80-2	25	60 Watts
T106-2	16	100 Watts
T130-2	18	150 Watts
T157-2	16	250 Watts
T200-2	17	400 Watts
T200A-2	13	400 Watts
T400-2	14	1000 Watts

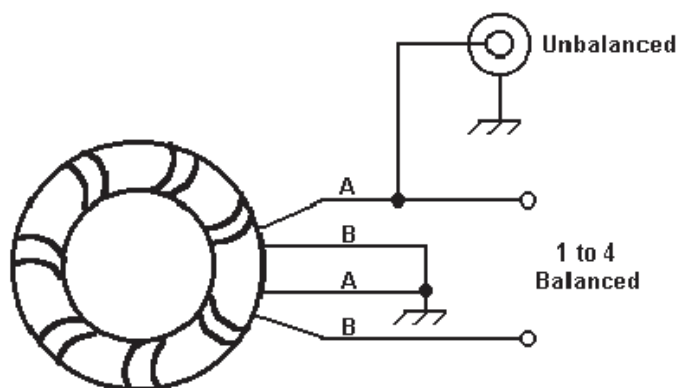


Figure 1

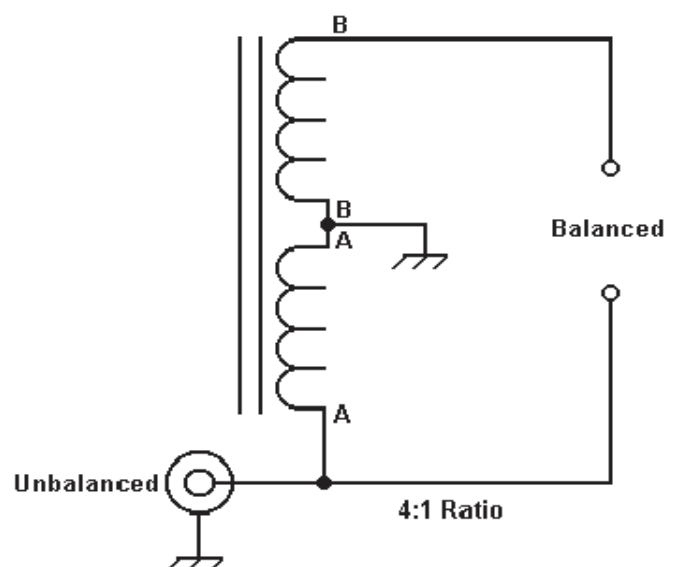


Figure 2

Linux for Hams - more hints

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tory "." is always the *current directory*. The directory ".." is the *parent directory*. Directories in a filename are separated with the forward slash "/" in Unix (":" in a Mac, "\" in Windows/DOS) e.g. ~phil is synonymous with /ximpact1/usr1/phil.

WARNING: There is no Trash or Recycle Bin in Unix/Linux. Once you delete a file it is gone forever. There are some file protection versions of the commands which hide deleted files but they are few and far between.

Command Description

Usage example

Simple Shell Commands

alias	Make command alias	alias ls 'ls -alF'
echo	Echo string to output	echo "This data is bad"
exit	Exit the shell	exit
history	Show command history	history
logout	Exit the (login) shell	logout
set	Set variable to value	set a = 1
setenv	Set environment variable to value	setenv DISPLAY ximpact1:0

More Simple Shell Commands

date	Show date and time	date
df	Display filesystem data	df -k
du	Disk usage	du -sk *
man	Manual (help)	man cat
script	Record EVERYTHING you type/see	script really_big_logfile
who	Who is logged into the system	who
whoami	Who the Hell am I ?	whoami
which	Which command will I execute?	which denzo

Job Control

&	Run process in background	gzip *img &
^Z	Suspend (stop) process	^Z
^C	Interrupt (kill) process	^C
bg	Run (suspended) process in background	bg
fg	Run process in foreground	fg
ps	Show processes	ps, ps -efl
jobs	Show jobs (process under shell control)	jobs
kill	Kill process	kill process_id
killall	Kill all named processes	killall netscape
nice	Run processes at reduced priority	nice gzip *img

If a process is running in the **foreground**, the shell waits for it to complete before accepting more command input. In the **background**, the process runs semi-independently of the shell - even if the shell exits the process keeps running (you may need "set nohup" in your .cshrc for this).

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Linux for Hams - more hints

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Command Description

Usage example

File Redirection

> Write output to file
 >> Append output to file
 | Pipe output to input of next command
 < Take input from file
 << String Read data from input until "String"

ls > listing
 ls .. >> listing
 ls * | grep img
 molscript < ms.in
 peek2 << EOF

Printing

lp Print to default printer
 cancel Cancel print job
 lpstat Show status of printer queue

lp mydata.ps
 cancel request-ID
 lpstat -PHP4si

Advanced File Manipulation

chown Change owner
 chmod Change mode (permissions)
 ln Soft or hard links
 my_local_clone.fobs
 cut Cut file by columns
 paste Paste files back together by columns
 diff Show file differences
 sort Sort a file
 tee Copy output to screen and file simultaneously
 touch Create empty file/update access time
 wc Count characters/words/lines
 find Powerful file finder

chown phil.user myfile.dat
 chmod a+x my_script_file.csh
 ln -s ../mbsd39.fobs

cut -c1-30 file1
 paste file1 file2
 diff peek2.f peek2_old.f
 sort -n +7 -8 water.pdb
 ls | tee listing
 touch file1
 wc file1
 find . -size +3000 -print

File Transfer and Archiving

gzip Efficient file compression
 compress Less efficient file compression
 *.img.Z
 tar Make tape/disk archive
 ftp File transfer between remote machines
 telnet Login to remote machine

gzip *.img ; gunzip *.img.gz
 compress *.img ; uncompress

tar -cvf /dev/tape my_data/.
 ftp xray2.mskcc.org
 telnet xray2.mskcc.org

Simple Graphics Commands - LINUX

acroread Adobe Acrobat Reader (PDF)
 gs View Postscript/PDF files
 display Display graphics file
 convert Convert between file formats
 gimp Photoshop-like image manipulation

acroread paper.pdf
 gs paper.ps
 display image.jpg
 convert image.jpg image.pict
 gimp

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Linux for Hams - more hints

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You are in a darkened room. You can just see a blinking cursor. As you get closer, you can see "ron@ZS6BHH:~\$". Its a prompt but not one as we know it. Not a 'normal' DOS or Windows prompt. It's a Unix (Linux) prompt. You start to look around...

Once upon a time it was referred to as "the dark place" by children who had only known Windows. It certainly can be an unhelpful and difficult area to get used to. Most users quickly type in 'startx' and press return. This is a retreat as it takes you to the graphical user interface that looks and feels like Windows.

This all assumes you managed to login using your user name and password. Logging in using 'root' is considered a 'no-no'. The 'root' or administrator has the ability to do anything on the system including wiping out files and system. So you should login as a 'plain' user and use the 'su' (super user) command to assume the status of administrator. You will be prompted for a password and this should be a non-simple, difficult to remember string of characters and numbers. Of course you should write it down! But not on the faceplate of the monitor or the keyboard! If this machine is to be connected to the Internet, you should have all this in place before you connect.

If you are logging in as 'root' now is the time to add a user. Type 'adduser' and press enter. Alternatively type '**adduser** your-name' and press enter. Careful reading of the screen and trying the help will ultimately lead you to success.

Once you have added a user with your name and assigned a password. You should make sure there is a strong password for the 'root'. Make sure you write it down somewhere. Now logout and login as yourself. Try the 'su' command and remember the 'root' password. This should get you going sufficiently to install new software as 'su' and to operate normally as

yourself.

F1, F1! [Help]

Most commands have an option parameter '- -help'. So type the command, such as 'ls - -help' and press enter.

Or you can try 'man command', 'help command' or even 'info command'. Where 'command' is the text of the command such as 'ls', 'df', 'mount' or 'su'.

Navigation

First we need to be able to navigate around the files and directories. So lets start with 'pwd'. Pwd shows the working directory and prints it to the console.

If you use 'CD' and type it on its own and press enter, you will be returned to your 'home' directory. Very handy when you want to return home! But not so useful when you actually wanted to type 'CD /etc'. Still the up arrow key works just like the F3 key in DOS, so you can save retyping and add to the previously typed 'CD'. Such as 'CD /etc'. You are probably squinting at the '/' and saying under your breath "Its the wrong way round". No it isn't. Unix/Linux uses the '/' for directory paths. So get used to it as Unix will ignore attempts to use the other '\' (backslash) in your navigation.

So how do I copy from a floppy disk?

First you have to 'mount' it. Then you have to 'cp' (copy) the file or files to somewhere. Lastly you should umount (unmount) the floppy so you can remove it. The same procedure applies for CD's and DVD's. Also its possible to mount other hard disks into the tree structure of the main hard disk, to increase storage capacity or backup.

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Linux for Hams - more hints

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So to mount the floppy:-

```
mount /mnt/floppy
```

then if you type...

```
ls -l /mnt/floppy
```

you should see the files on the floppy disk. You can then copy them to a directory on the hard disk using the 'cp' command.

```
cp /mnt/floppy/* • [NOTE the '.', this will copy all of the files to the current directory.]
```

What about a CD?

A cd is almost the same. Use 'mount /mnt/cdrom' to mount the CD. Then 'ls -l /mnt/cdrom' will produce a listing of the files and directories on the CD. Decide where you want the files put and cd there with 'cd /path/directory'. So that when you type 'cp /mnt/cdrom/folder/* .' It will copy them there. Don't forget the dot '.' Or you will find nothing happens.

Ham-Comp



In the past year we have seen numerous visitors to the Ham-Comp meetings. The next is on the 19th (next Saturday) at 13:00.

Early on I said we should find or build a Linux distribution that suited our needs as Radio Amateurs. I was quite pleased when I found one that would fit on a 200MB hard disk. But that pleasure didn't last as the operating system wouldn't even boot on a Pentium 1!

Unfortunately, just like the M\$ world, the Linux operating system has improved itself to utilise the latest hardware. This has meant that the 'veteran' hardware cannot even run satisfactorily the latest distributions. The search continues...

The existing hardware in the majority of machines (sold here) use a motherboard display adapter. Which lowers the cost considerably. However this probably won't be sufficient to run M\$ 'Vista'. Which will be released to corporates later this year. So you can expect an influx of redundant machines soon. These will be Windows 98 pc's that no longer have any support from the system supplier and cannot hope to run the newest offering from M\$.

Whilst there is no shortage of applications for Amateur Radio running on either Windows or Linux, there is a shortage of testers. If you would like to contribute to this cause, please contact me for details.

In my explorations I came across a solution for wireless networking for Linux. Either the very latest kernel must be used or a "wrapper" utility using the windows driver.

Recycling of 'veteran' hardware is going to be an essential part of our techno-society in future. Start preparing yourself by visiting one of our meetings.

See you at the meeting...or next Saturday

JB 2006



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[NEW EMAIL ADDRESS]

Bulletins (Sundays at ...)
11h15 Start call in of stations
11h30 Main bulletin start

Frequencies

439.000MHz 7.6MHz split
(West Rand Repeater)
145,625 MHz (West Rand Repeater)
10,135 MHz (HF Relay)

Radio Amateurs do it with more frequency!

Chairman/Treasurer	Dave	ZR6AOC	475 0566 (H)	zr6aoc@mweb.co.za
Vice Chairman	Keith	ZS6AGF	675 1604 (H)	zs6agf@polka.co.za
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Digital Communications	Stuart	ZS6OUN	082 573 3359	sbaynes@iafrica.com
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Member (Anode)	John	'PieRat'	011 768 1626(H)	brockjk@gmail.com
Member	Craig	ZR6CRW	795 1550 (H)	craig.woods@absamail.co.za

West Rand members - we need your input!

To make this the best ham radio magazine in South Africa we need your input. Please submit articles, comments, suggestions etc.

Please send plain text with no formatting to the email address below.

In July 2003, we re-published an Anode Compendium on CD. It has the issues from July 2000 until June 2005. This included the new Adobe reader. It has been updated, check with the chairman for details.



We need your input! Email us articles, comments and suggestions please.
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