

Newsletter
June
2012

Kingston Amateur Radio Club

2012 Executive



Kingston Amateur News

President: Terry Barrett, VA3KLG
pres at ve3kbr.com

Vice-Pres: Steve Cutway, VE3KC
vicepres at ve3kbr.com

Treasurer: David Sellick, VE3DZE
treas at ve3kbr.com

Secretary: Assaf Shool, VA3PCI
sec at ve3kbr.com

Past-Pres: Steve Cutway, VE3KC
pastpres at ve3kbr.com

2012 COMMITTEE CHAIRS:
Two Metre Net Manager:
VE3KC Steve Cutway
netmanager at ve3kbr.com

Newsletter Editor:
VA3PCI Assaf Shool
news at ve3kbr.com

Repeater Committee:
VA3GST, John Snasdell-Taylor
va3gst at kos.net

VA3KGB, Chip Chapman
va3kgb at rac.ca

VE3JCQ, John Wood
john686 at sympatico.ca

VE3MNE, Don Gilroy
dgilroy at cogeco.ca

168 McMichael Street
Kingston, Ontario K7M 1N6 Canada
<http://www.ve3kbr.com>

VE3KAR Clarendon Stn
147.090 (+) MHz

VE3KER Kingston packet
node
145.010 MHz simplex



VE3KBR Kingston
146.940(-) MHz
151.4Hz Tone
IRLP 2750

VE3UEL-1 Hartington APRS
node
144.390 MHz

FROM THE PRESIDENT

With the good weather upon us I hope everyone will take great care in there Antenna maintance that I have no doubt that will be on everyone's agenda. If you require any help Phil VE3HST and myself both have safety belts and are will to give you a hand.

Thanks to everyone who attended the May's meeting and who enjoyed the excellent presentation by Mr. Ken Halcrow VE3SRS / VE8RCS who discussed Volunteer Search and Rescue communications.

I'm sure you're all doing amateur radio activities that others aren't and would all benefit from your knowledge and experience, So if you have any suggestions for a presentation, or if you'd like to do one (it isn't hard), please contact me, va3klg "at symbol" bell.net and I will put it on the agenda.



Up coming Contesting –

Field Day – 23 – 24 Jun. Don't forget the to drop by the icebreaker Alexander Henry and do a little operating. Contact David Sellick VE3DZE for details



Ron VE3GO has volunteered to host a Marine Restricted Radio License course some time soon. Anyone interested drop me an Email va3kg "at symbol" bell.net or contact Ron directly. This training is open to anyone who is interested so check with your boating friends to see if anyone is interested.



INSTRUCTORS: I am looking for volunteers to teach a Basic Amateur Radio Course
If you are interested in helping out in anyway please let me know va3klg "at symbol" bell.net.



In closing, I look forward to seeing everyone 09 Jun12. Until our next QSO

73 de VA3KLG
Terry

NET MANAGER'S REPORT

June 9, 2012

Thanks to the controllers who kept the net alive in May. Check-ins ranged from 10 to 15 stations and net duration ran from 27 to 67 minutes, quite a range!

The net control schedule for June to December 2012 is in this newsletter.

I'm always looking for new controllers. Controlling isn't difficult. The script is on the Club website.

But the most important thing is that you check into the net every Tuesday night at 7:30 because without you, it's pretty lonely.

Steve

VE3KC

KARC HAMFEST

Hamfest 2012 is set for Saturday, Nov. 17th from 09:00 to 1200 at the Military Communications and Electronics Museum.

Doug VE3FFR is coordinating the hamfest this year with help (so far) from Terry VA3KLG and Steve VE3KC. Thanks, Doug. Admission is a financial donation to the museum and tables are \$10 each and can be reserved by e-mailing <hamfest@ve3kbr.com>. Doors will open for vendor setup at 07:30. Harold VE3BPM, who has been at every KARC hamfest, will be there and Durham Radio have said they expect to be too. We need someone to run the talk-in on VE3KBR. ONTARS is also interested in having controllers from the museum early in the net to help promote the hamfest. Anyone interested, please contact Terry or Steve. So check your basements and shacks and bring all the equipment you're no longer using.

If you need help, just ask your better halves. :-)

MEETING MINUTES

**MINUTES OF MEETING
OF THE
KINGSTON AMATEUR RADIO CLUB, INC
HELD ON
Wednesday 2 May 2012
At Smitty's**

The Kingston Amateur Radio Club meeting was called to order at 7:00 PM by our vice president Steve VE3KC.

1. The members present introduced themselves. There were 22 members in attendance.

2. **Additions to the Agenda:** None.

3. **Minutes:** Les VE3KFS, seconded by Chip VA3KGB, moved to accept the minutes as published in the May newsletter,. Motion carried.

4. **May Treasurer's Report:** David VE3DZE read the May financial report. We had a closing balance of \$5270.41 plus \$25 received at the meeting for membership. David moved, seconded by Chip VA3KGB, that the financial report be accepted as read and as posted in the May newsletter. Motion carried.

5. **Business Arising from the Minutes:**
 - a) **Meeting/Tour of Museum:** The next club meeting will be Saturday, June 9 @ 11AM, held at the C&E Museum. A tour of the museum will follow. There will be no meetings in July and August. The first Fall meeting will take place on Wednesday, September 5, 2012.
 - b) **Post-office box:** We no longer have a post office box pursuant to the motion passed at the April meeting. Snail mail will now be going to Steve VE3KC's home. Glentel, RAC & the insurance company have been notified. This will

result in a cost savings of \$158.50.

c) **Voice ID on Repeater:** At the April meeting, Herman VA3QX, seconded by Assaf VA3PCI, moved that we install voice identification playing without CTCSS. This motion was tabled. Les VE3KFS moved, seconded by Doug VE3FFR, to raise the motion from the table. The motion carried. Steve VE3KC reported that following the April meeting, he contacted Industry Canada to get clarification of the regulations governing station identification.

Two Industry Canada representatives in Ottawa said that stations, attended or unattended, must identify themselves by transmitting their call letters every 30 minutes. It's a spectrum wide requirement that applies to all users, not just the amateur radio service. They said that station IDs may not be transmitted in any manner that allows their transmissions to be blocked. They said that Industry Canada would consider that jamming. Steve told them why he was asking and they said that Morse code identification is all that's required of business and commercial users as well as the amateur radio service.

The executive discussed this matter at its April meeting. Assaf VA3PCI, the seconder of the original motion, withdrew his support for it. Herman VA3QX withdrew the motion. Based on a suggestion from Assaf VA3PCI, the executive proposed that the voice ID could be returned to the repeater but transmitted by the IRLP computer instead of the CAT-250 controller. This would allow greater control & flexibility of the announcements. Assaf VA3PCI demo'd this approach. After some discussion, Ron VE3GO moved, seconded by Chip VA3KGB, that we implement it on a trial basis for one month. The motion carried.

6. New Business:

a) **Proposed amendments to Bylaws as published in the May newsletter:** Chip VA3KGB moved, seconded by Les VE3KFS, to accept them. Motion carried.

b) **Field Day 2012:** David VE3DZE reported that they will be attempting to setup a 3A station at CSGS Alexander Henry for June 23 & 24. It is open to anyone who would like to participate.

c) **Hamfest:** This year's hamfest will be held on November 17, Doors open @ 730AM. Table booking requests should go to hamfest@ve3kbr.com.

7. Reports:

a) **President:** No report for this month.

b) **Repeaters:** VE3KBR was briefly down this afternoon, it is unclear as to the cause but either on-site antenna work or power outages in the area are suspected.

c) **Lanark County Auto Rally:** Will be taking place over the weekend of May 5/6 and they will be using the VE3KAR repeater.

d) **RAC:** The Ontario Ministry of Transportation is proposing a 5 year extension on hands-free exemption for Amateur mobile operation in Ontario. The proposal is available on the VE3KBR.COM website.

d) **Net Manager:** See the May newsletter for report.

e) **Web Page:** Chip VA3KGB has been making regular updates to it.

f) **Newsletter:** Assaf VA3PCI reminded everyone that articles for the newsletter should be sent to news@ve3kbr.com a week before the monthly meeting and thanks everyone for articles that have been submitted.

g) **Frontenac EMCOMM:** David VE3DZE reported that they have held an antenna workshop and they have been

practising digital modes using different programs.

h) **Kingston ARES:** Roy VE3VJF said they are still waiting to hear from the Red Cross about move to a new building.

i) **CFARS:** Les VE3KFS said that 2 new gateways have been added to the pactor network. 11 new callsigns have also been added, bringing CFARS membership to over 110.

k) **Amateur Radio Course:** Amateur rewrite for 14 students will take place on the base.

l) **'Hearts and Flowers':** None.

8. **Date of next meeting:** June 9, 2012, 11AM at the Communications & Electronics Museum.

9. There was no 50/50 draw.

10. Adjournment: Roy VE3VJF moved, seconded by Doug VE3FFR, to adjourn the meeting. The motion carried.

Presentation: Ken Halcrow VE3SRS/VE8RCS gave an interesting and informative presentation on Volunteer Search and Rescue communications.

Assaf VA3PCI

Secretary

Kingston Amateur Radio Club Inc.

AGENDA - 9 JUNE 2012

1. Members and Guests introduce themselves
2. Additions to the Agenda
3. Minutes of the last Meeting: errors / omissions / approval (Assaf VA3PCI)
4. Treasurer's Report (David VE3DZE)
5. Business arising from the Minutes:
 - a. Voice ID on Repeater
 - b.
6. New Business:
 - a. Hamfest (17 Nov 2012)
 - b.
7. Reports:
 - a. President (Terry VA3KLG)
 - b. Repeaters (Chip VA3KGB)
 - c. RAC (See RAC bulletins via the Free List.)
 - d. Net Manager (Steve VE3KC)
 - e. Web Page (Chip VA3KGB)
 - f. KARC Newsletter (Assaf VA3PCI)
 - g. Frontenac EmComm Group (George VE3SIQ)
 - h. Kingston ARES
 - i. CFARS (Les VE3KFS)
 - j. "Hearts and Flowers"
 - k. Other Reports
8. Date of next meeting: 05 Sept 2012
9. 50 / 50 Draw
10. Adjournment

FINANCIAL REPORT

Kingston Amateur Radio Club
Financial Statement
May 31 2012

Income

Membership 25.00

Total Income 25.00

Expenses

0.00

Total Expenses 0.00

Overall Total 25.00

Bank Balance

Co-Operation Plus Account \$5055.90

Dividend Savings \$23.07

Equity Shares \$216.44

As of May 31st, 2012 **\$5295.41**

2012 KARC MEETING DATES

Saturday, June 9
Wednesday, Sept. 5
Wednesday, Oct. 3
Wednesday, Nov. 7
Wednesday, Dec. 5

NET CONTROL SCHEDULE

Month	Date	Controller
June	5	VE3VJF Roy
June	12	VE3CAK John
June	19	VE3DZE David
June	26	VE3JPW Warren
July	3	VE3KC Steve
July	10	VE3NFU Bill
July	17	VA3PCI Assaf
July	24	VE3VJF Roy
July	31	VE3CAK John
August	7	VE3DZE David
August	14	VE3JPW Warren
August	21	VE3NFU Bill
August	28	VE3KC Steve
September	4	VA3PCI Assaf
September	11	VE3VJF Roy
September	18	VE3CAK John
September	25	VE3DZE David
October	2	VE3JPW Warren
October	9	VE3KC Steve
October	16	VE3NFU Bill
October	23	VA3PCI Assaf
October	30	VE3VJF Roy
November	6	VE3CAK John
November	13	VE3DZE David
November	20	VE3JPW Warren
November	27	VE3KC Steve
December	4	VE3NFU Bill
December	11	VA3PCI Assaf
December	18	VE3VJF Roy

MEMBER ARTICLE

What Confuses Me about Industry Canada Regulations

by Phil, VE3HST

The Radio Amateurs of Canada web site states that "Industry Canada is the government department responsible for administering amateur radio in Canada."



When I look at the IC web site, there are a number of standards and regulation that I find confusing. Here are a few by heading from RBR-4 - Standards for the Operation of Radio Stations in the Amateur Radio Service.

1. Scope: "Operators must comply with these provisions in accordance with sections 45, 52 and 53 of the Radiocommunication Regulations". Now lets look at those three sections.

Section 45 in its entirety is: "A person shall operate radio apparatus in the amateur radio service in accordance with the technical requirements set out in the Standards for the Operation of Radio Stations in the Amateur Radio Service, issued by the Minister, as amended from time to time". How is that for circular reasoning?

Section 52 is about interference. That is ok.

Section 53. On the linked index page of the Radiocommunication Regulations, there is Sections 52 and 54, but no Section 53. However, if you go to Section 52, then there is a Section 53 at the bottom of that page. And it looks like this:

53. (1) "A determination under section 52 does not apply to a determination under paragraph 5(1)(l) of the Act". (2) "No person shall operate radio apparatus contrary to an order made under subsection 52(1)". That is very useful and very clear.

2. Definitions:

"For the purposes of this standard, 'foreign amateur' means an individual who holds:

- a. an amateur radio operator licence issued by the Government of the United States, where the holder is a citizen and resident of the United States; or
- b. a ministerial authorization in accordance with the provisions of paragraph 42(i) of the Radiocommunication Regulations;

And if you go to paragraph 42(i) in the Radiocommunication Regulations, it says:

- (i) a radio licence in the amateur radio service and an amateur radio operator authorization, issued by the responsible administration of a country other than Canada, if
- (i) the individual is a citizen of that country, and
- (ii) a reciprocal arrangement that allows similar privileges to Canadians exists between that other country and Canada; and
- (j) a radio licence for a radio station in the amateur radio service issued to a citizen of the United States by the Government of the United States”.

It looks like those interconnected paragraphs in the two separate documents were designed by a committee that has never heard of clear communications.

3. Frequency Bands and Qualifications

3.1.2 “A foreign amateur who is qualified to send and receive in Morse code at a speed of at least 5 w.p.m. may operate an amateur station in Canada in accordance with the provisions applicable to the holder of an Amateur Radio Operator Certificate with Basic, Morse Code (5 w.p.m.) and Advanced Qualifications”.

This seems to say that foreign amateurs can only operate with advanced privileges in Canada if they are qualified to send and receive in Morse code at a speed of at least 5 w.p.m., even though Canadian amateurs can don't have to know any Morse code for the same privileges. And Canada doesn't test any amateurs for their qualifications to transmit Morse code, only receive. To me, this is very convoluted.

5. Frequencies for Radio Control of Models

“The frequency for the radio control of a model is limited to any frequency within the frequency bands above 30 MHz set out in Schedule I”.

It is a bit confusing to me that this is right up front in Section 5 of the Standards, given that I have never operated Radio Control Models in the amateur radio bands, and have never heard of any Canadian amateurs who have done so. Surely there are more important things to put as number 5.

So far, all this confusion and ambiguity are in the first 5 sections. I think it is no wonder than new amateurs and old amateurs alike are quite confused and often not very knowledgeable about the Industry Canada regulations that govern our hobby. Maybe next month, I'll continue to Section 6 and beyond. In the meantime, you might find these regulations very entertaining to read yourself.

References:

1. <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01226.html>
2. Antenna and Flag.jpg from <http://en.wikipedia.org/wiki/File:Montreal-tower-top.thumb2-crop.jpg>

GUEST ARTICLE

Proposed Canada Day ROS Digital Contest

by Tom, VE3TEF

How does the possibility of working countries around the world without the usual fierce competition from the US stations sound?

What about the possibility of your station being sought after by the rest of the world?

This could be possible if you wish it!

Yes, this sounds like some sort of infomercial, but it could also be true.

There is a mode known as ROS, which is not well known in North America because of some controversy with the FCC and ARRL. ROS was developed just over two years ago by a ham in Spain named Jose Alberto Nieto Ros, EA5HVK. It has many of the features most of us are familiar with in other modes as well as the ability to decode down to -35db, links to the VOACAP propagation prediction maps, PSK Reporter's ROS maps and an online chat screen. Jose put a lot of hard work into this project and has done an excellent job!

My first exposure to this mode came when I read a headline on EHAM about a new mode. This was one week after the initial release of the software two years ago. I have to admit that I was shocked when I fired up my FT-817 and hit send. With 5 watts output into a longwire at around 0200z on 20m, I had a response from an Italian station! The cycle was still low and the band appeared to be dead! Yes, it was likely a fluke opening, but when you think you are transmitting where no one will hear you, only to have a response from Europe, it gets the adrenalin going! These days, I only operate occasionally when my life allows it, so I do not get on often, but, I have had several good long QSO's with Jose and others in the past and enjoy the mode very much when I am able.

Now for the reason I am writing:

A fellow member of the European ROS Club, Neil, VE7NH, was in contact with me asking if I would be interested in becoming a target station for a proposed contest to commemorate Canada Day. The proposed length of the contest is two weeks starting on Canada Day. He was also looking for any other stations that would be interested and given that we have several people in the area that are into contests, I thought this would be a good item to bring to the attention of the group at large. Since I am no big gun station, I felt my contribution would best be made by trying to involve some of the more powerful stations in the area. I plan on being on the air with my QRP station during that period to wave my tiny flag!

As I mentioned before, there is very little ROS traffic from the US, which means we Canadians could cause a few pileups on the bands since we will be the sought after dx stations! That doesn't happen every day!

If you are interested in trying ROS, the link to the software and other information is:

<http://rosmodem.wordpress.com/>

If you are interested in participating in the contest, possibly becoming a target station, or for additional information, please contact Neil, VE7NH. His email is nnbrwn at dccnet.com.

The European ROS Club can be found at:

<http://www.europeanrosclub.com/en/quienes-somos/>

There are currently 12 Canadians out of about 1000 members.

Also, as an addition to Phil, VE3HST's article in the April newsletter about QRSS, Jose has written a QRSS style program called OPERA, which takes care of decoding and transmitting a QRSS style beacon signal. This particular program uses the on-off keying method as opposed to the fsk style keying.

My 500mw signal has been heard all over! OK, that's QRO for HF QRSS, but it's as low as the 817 goes!

Tom, VE3TEF, ERC Member #419

MEMBER ARTICLE

Cutbacks to International Broadcasters

by Phil, VE3HST

International broadcasters in Canada, UK, USA, Australia, The Netherlands and others are suffering dramatic cutbacks to their services and especially to their on-air radio broadcasts. Other countries don't seem to be cutting back nearly so much and some are greatly expanding their broadcast services. The best summary of this situation was provided by Amanda Pfeffer of CBC Ottawa in a 12 minute article aired on Radio Canada International [1]. This article states that BBC cutbacks mean the loss of 20% of the its World Service staff. The US Voice of America is cutting back a bit, and closing some of its radio broadcasting. The Netherlands Worldwide service, which was one of the first international broadcasters and has been broadcasting to the world for 65 years, is being cut by 70% and is closing its on-air broadcasting [2]. Radio Australia is cutting back. In the last five to eight years, Radio Deutsche Welle has reduced its budget by 75 million euros and its staff from 2,200 to 1,200 [3]. However, China is greatly expanding its international broadcasting including on-air broadcasting [1].

However, the most serious cutbacks are to Radio Canada International. RCI was first started in 1945 as the CBC International Service with programs in English, French and German with transmitters and antennas in the marshes near Sackville, New Brunswick [3]. For me, growing up in Prince Edward Island, these antennas were particularly impressive to see along the highway during infrequent visits to Moncton. And we saw them a few times over the last three years during trips to Nova Scotia and PEI.



Alas! After 67 years, these transmitters and these antennas are closing down forever. Very sad! RCI has suffered a budget cut of 80%, from \$12.3 million a year to \$2.3 million a year [4]. Two-thirds of the staff will be gone. All broadcasting, including satellite broadcasting, will cease. About all that will be left will be a web page, providing limited online service in English, French, Spanish, Arabic and Mandarin.

These cutbacks must be especially troubling to the Shortwave Listener (SWL) community which is seeing some of the giants of international broadcasting cutting back and disappearing. The world is changing. Everything is going to the Internet. Lets hope our amateur radio hobby doesn't follow that path as well. Maybe we should try to turn off our computers more often and turn on our transceivers, especially on the HF bands, and keep our brand of international broadcasting alive and well.

References:

1. http://www.rcinet.ca/english/column/the-link-s-top-stories/15-28_2012-05-11-the-future-of-international-broadcasting/1/
2. http://en.wikipedia.org/wiki/Radio_Netherlands_Worldwide
3. <http://www.rcinet.ca/english/about-us/historique/>
4. Sackville RCI Antennas: http://en.wikipedia.org/wiki/Radio_Canada_International

GUEST ARTICLE

Conversion of Computer Server Power Supplies for Stand Alone Operation

by Dave Fasken, VA3DLK

The recent availability of computer server power supplies on the surplus market is a great opportunity for the RC modeller to obtain high power, compact and efficient power supplies at very low cost. These power supplies are also power factor corrected which will increase the power capabilities of most small generators by approximately 30%. This is due to the fact that most small generators are rated at a PF of 1.0. No commercially available power supplies are available to the Radio Control market with these capabilities.

For use in Lipoly charging it is recommended that the -12V be isolated from chassis ground to prevent possible shorting of the test leads to case and also to allow for connecting two supplies in series for 24V operation without having to insulate the cases from each other. This in no way is a safety concern as the chassis is still connected to ground of the power supply cord.

For use as a power supply for Ham radio use it may be best that the case be left connected to -12V. This may help reduce RF noise from the switching power supply but experimentation will have to be done as to the best way to eliminate the RF. I don't believe the interference will be an issue on VHF radios but on HF radios the lower bands will definitely be affected and some sort of RF filtering will be required.

Although there is no formal standard for the pin configuration it would appear that the majority of drawings show that the rows are lettered starting from the bottom up and the columns are numbered starting from the left. This is opposite to the spreadsheet configuration I used in my first write up and has been changed to follow the generally accepted standard in Revision 1.

This write up will describe what modifications are required to get several different types of server power supplies to run in a standalone mode.

Dell DPS-500CB A

This supply is rated at 502 watts output and 12 Volts at 41 amps. Testing showed this supply to have an efficiency of 82% and unity power factor with a load of 43 amps which is actually slightly higher than its 41 amp rating.

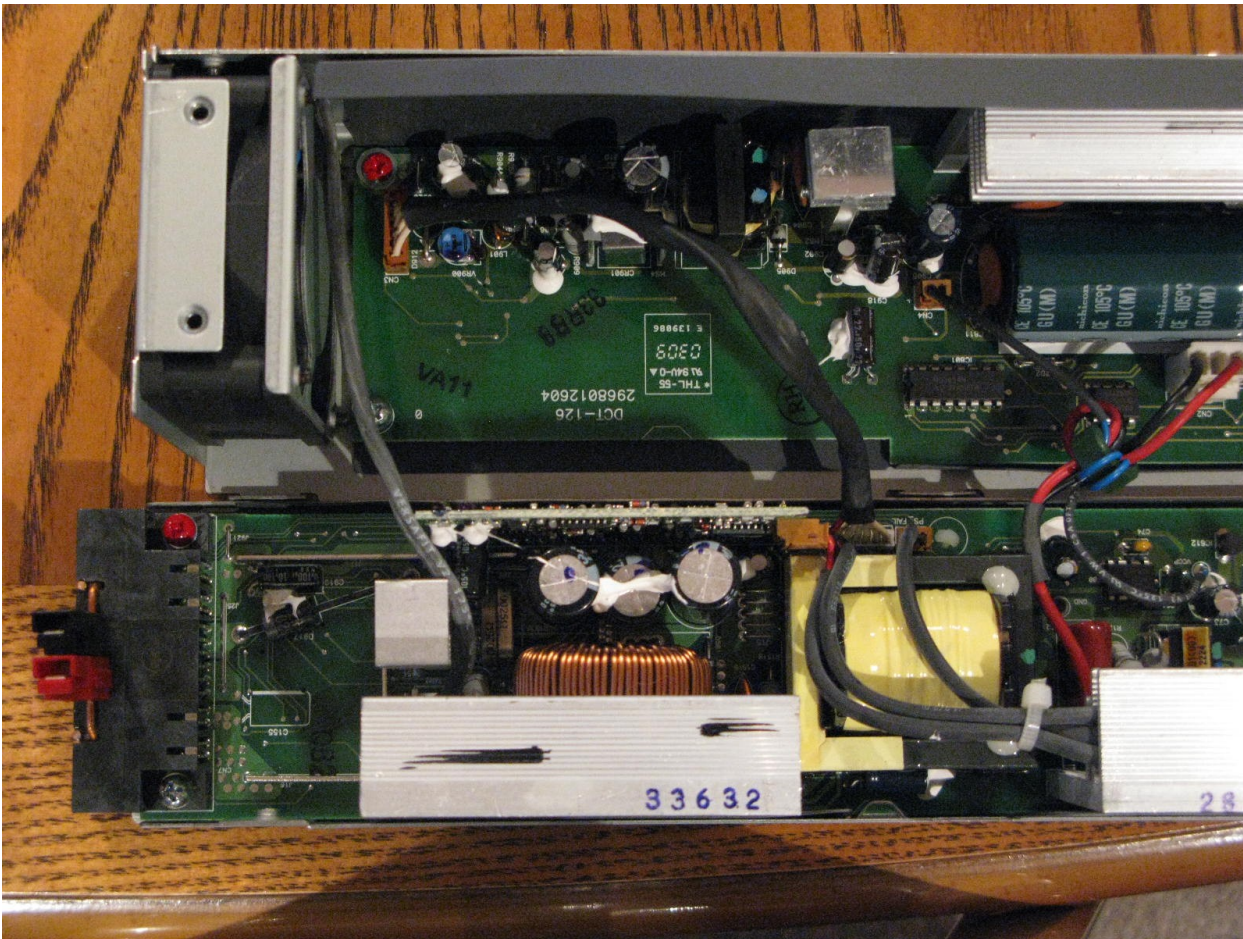
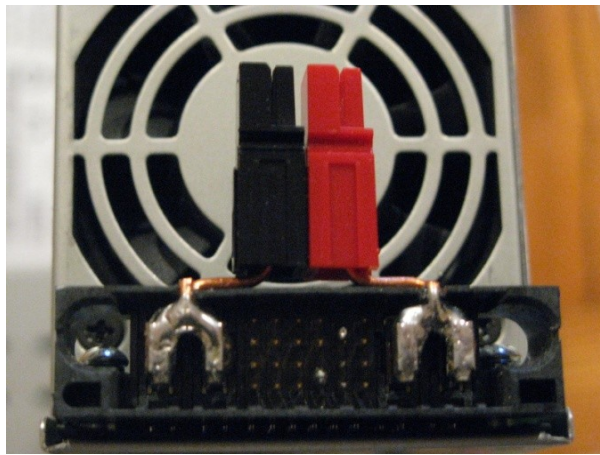
Power Up Jumpers: Pin B4 to A4 and D5 to C5. This can be done easily without jumper wires as the pins can be bent together and soldered.

Power Terminals: Two left large terminals are - 12V and two right are + 12V. These terminals must be paralleled to be able to handle full load rating of the power supply.

Voltage Adjust: There are no obvious voltage adjust potentiometers internally to the supply but I was able to get the voltage to rise from 12.5V to 12.85 by jumpering A2 to A5.

12V Negative Ground Removal: In order to isolate the chassis from -12V the supply must be opened and two screws removed and isolated with fibre or nylon washers under the PCB and under the screw head. The attached picture shows the screws in red which must be isolated.

Fan Speed Control: This fan has no known external fan speed control but is not required as it is reasonably quiet.



DPS-500CB A Ground Isolation Screws

HP DPS-600 B:

This supply is rated at 600 watts output and 12 Volts at 47 amps. Testing showed this supply to have an efficiency of 81% and unity power factor with a load of 42 amps. The supply is also known as a DL380 G4.

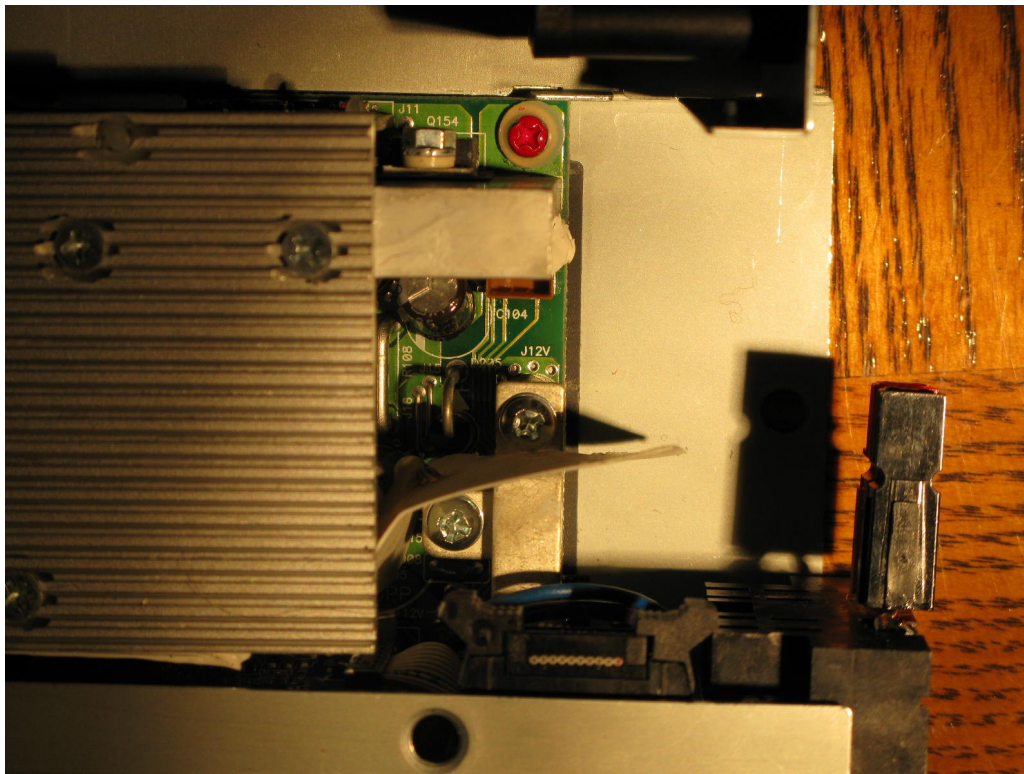
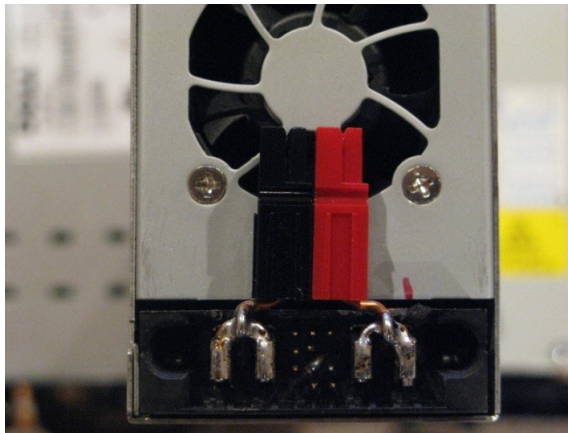
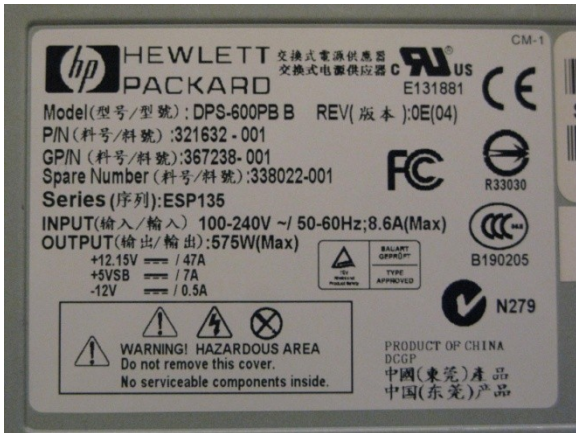
Power Up Jumpers: Pin A1 to B2 to C3. This can be done easily without jumper wires as the pins can be bent together and soldered.

Power Terminals: Two left large terminals are - 12V and two right are + 12V. These terminals must be paralleled to be able to handle full load rating of the power supply.

Voltage Adjust: A 5k ohm potentiometer connected between D3 to B3 will allow some voltage adjustment. The voltage can be adjusted from 12.5V to over 13.8V but should not be adjusted over 13.5V as the power supply will shut down on overvoltage at 13.8V. A

Fan Speed Control: A 5K to 10K ohm potentiometer connected across the 12V output with the center wiper connected to pin C1 will allow control of the fan speed. A better alternative to this would be to install and connect an LM34 temperature sensor as described at the end of this write-up. This will automatically control fan speed dependent on power supply temperature.

12V Negative Ground Removal: In order to isolate the chassis from -12V the supply must be opened and two screws removed. The fibre insulating sheet inside must be detached from the side cover to allow access to the internals. This is easily done by inserting a screwdriver between the insulation and case. The upper screw in Red must be insulated with nylon or fibre washers. The second lower screw which is hidden under the bus bar is left out and a small piece of insulation placed between the PCB and chassis standoff. The attached picture shows the screw in red which must be isolated.



DPS-600 Ground Isolation Screw

Dell NPS-700AB A or 7000814:

This supply is rated at 700 watts output and 12 Volts at 57 amps. Testing showed this supply to have an efficiency of 82% and unity power factor with a load of 43 amps. Dell has a second version of this supply which is Model 7000814-0000 with identical specifications. These power supplies do not have a fan shield. The fan runs at very high speed and should have some form of protective screen mounted to the case.

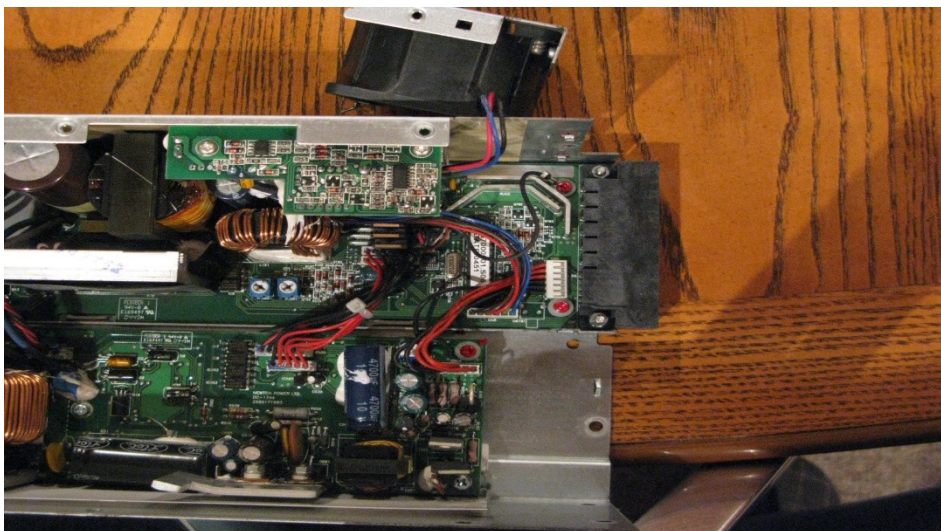
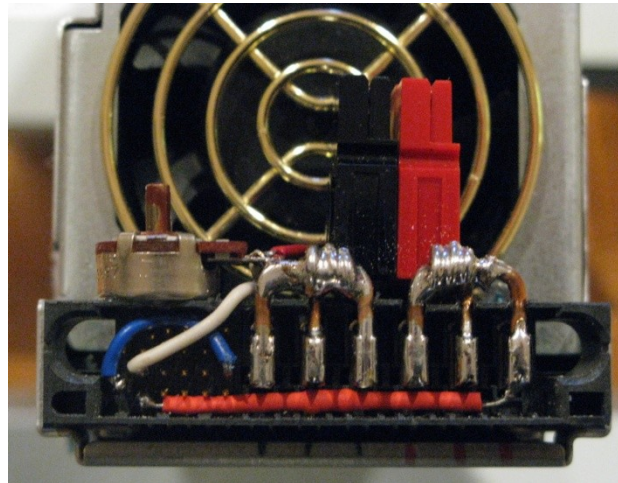
Power Up Jumpers: Pin B1 to A1 to B6. B1 to A1 can be joined together and soldered but a short jumper is required to go from this junction to B6.

Power Terminals: There are 6 power pins to the right of the small pins. The three left pins are the -12V and the three right are +12V. These terminals must be paralleled to be able to handle full load rating of the power supply. Although difficult to see in the picture there are two sets of power pole connectors in parallel.

Voltage Adjust: There appear to be two ways to adjust the power supply voltage. Jumpering pin A2 to positive will raise the voltage to approximately 12.5V. The NPS-700AB has an internal potentiometer VR601 (right one of two) that will adjust the voltage from 11.85V to 12.85V. If you increase voltage with VR601 I recommend you don't go above 12.5 volts to be sure the power supply does not shut down on overvoltage.

Fan Speed Control: A 5K to 10K ohm potentiometer connected across the 12V output with the center wiper connected to pin B2 will allow control of the fan speed. A better alternative to this would be to install and connect an LM34 temperature sensor as described at the end of this write-up. This will automatically control fan speed dependent on power supply temperature.

12V Negative Ground Removal: In order to isolate the chassis from -12V the supply must be opened and three screws removed and isolated with fibre or nylon washers under the PCB and under the screw head. The attached picture shows the screws in red which must be isolated.



Dell NPS-700 Ground Screws Isolation

Dell PowerEdge 6650 Model 7000245:

This supply is rated at 900 watts output and 12 Volts at 72 amps. Testing showed this supply to have an efficiency of 79% and unity power factor with a load of 41 amps.

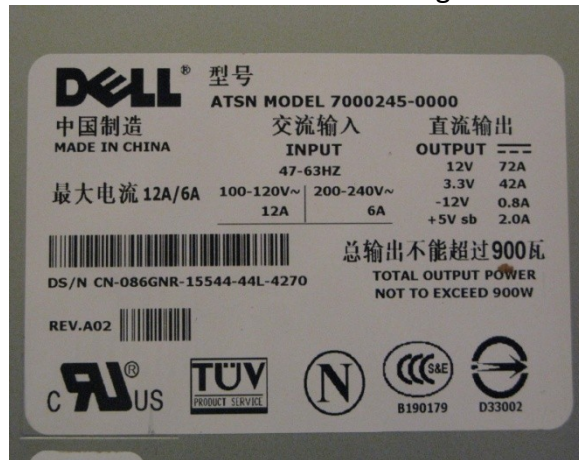
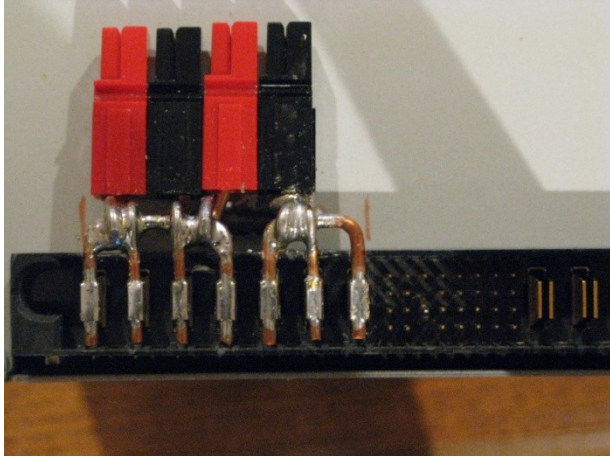
Power Up Jumpers: Pin C3 to B3 to A3. They can easily be joined together and soldered without the need for a wire jumper.

Power Terminals: There are 7 power pins to the left of the small pins. The four left pins are the +12V and the three right are -12V. These terminals must be paralleled to be able to handle full load rating of the power supply.

Voltage Adjust: Connecting a 10K ohm potentiometer from pin A1 to ground will allow you to adjust voltage from 12V to 13.5V. The power supply will shut down on overvoltage at 13.5 volts so do not increase voltage above 13.25V. A fixed 1K ohm resistor from A1 to ground will raise the voltage to approximately 13V.

Fan Speed Control: Unknown at this time but fans are relatively quiet so none required.

12V Negative Ground Removal: This supply does not have the -12V connected to ground.



Optional Fan Speed Control Methods:

On both the HP DPS-600 and Dell NPS-700AB A power supplies the fan speed can be controlled in a few different ways.

- 1) This is the simplest way and requires just a switch to jumper C1 to ground on the DPS-600 or B2 to ground on the NPS-700AB. This will reduce the speed to a more reasonable speed for indoor use but you must remember to put the fan on high speed if you plan to draw a large load on the supply.
- 2) A second method is to connect a 5k to 10k ohm linear potentiometer across the 12 volts and connect the center terminal (wiper) to the same terminals as the ground above. This will allow an adjustable fan speed control.
- 3) The third and best way to control fan speed is to install an LM34 temperature sensor on the main output transistor heat sink. The sensor is connected across the 12 volts with its center terminal connected to the fan control pin as in the above examples. The sensor will output a voltage of 1 to 2 volts over the temperature range of 100 to 200 degrees Fahrenheit which is within the required voltage range required to control the fan speed. Refer to the LM34 data sheets available on the internet for the correct sensor connections.

Connecting 2 power supplies in Series for 24V:

Some of the new larger battery chargers require 24V to deliver their maximum power rating so to do so we simply connect 2 power supplies in series. This does however require that the 12 volts supply DC output be completely isolated from ground.. If the ground is not removed from the DC output then one of the supplies would be shorted out when the cases touch each other. This does not mean that the supplies are no longer grounded as the main AC power cord will connect the case to ground. It is also important that the supplies are of the same size.

I would also suggest that different connectors be used for the 24V output leads so that you cannot connect a 12V charger to the 24V supply.