```
                     Main VNA PCB Ordering Procedure
                     ------------------------------
```

Here's one way to obtain the main VNA printed circuit board from ExpressPCB.
ExpressPCB call this board size their "Miniboard." The minimum Miniboard order
is three identical boards for a total of $62 (US only) - i.e. three VNAs.

**Note: It is important that ONLY the Miniboard service be used at ExpressPCB
      with the "VNAV1A.PCB" as provided. There are problems in the silkscreen
      and both solder mask layers that preclude using the other ExpressPCB
      processing services without changes to the "VNAV1A.PCB" file.**

Print this out to aid in proceeding through the steps.

Extract the "VNAV1A.PCB" file from the "VNA_PCB_V1B_Build_Info.zip" file
downloaded from the website.

I would HIGHLY recommend that you make two copies of the "VNAV1A.PCB" data
file on your hard drive. The first is your reference copy - never open or do
anything to this one. The second is your working copy that you can use in
the ExpressPCB program.

With these two copies, you can always do a file compare and/or compare its
info to the reference info below to make sure no changes are made to your
working copy.

Here's some reference info from Windows Explorer for this file:

```
---
Size:         53.9 KB (55,240 bytes)
Size on disk: 56.0 KB (57,344 bytes)
Created:      March 06, 2003, 10:30:57
Modified      March 19, 2003, 13:09:30
---
```

To get a quick familiarization of ExpressPCB and their software, read:

http://www.expresspcb.com/ExpressPCBHtm/HowWorks.htm

Click on & read all the links there too.

Then download their software from:

http://www.expresspcb.com/ExpressPCBHtm/Download.htm

Virus check the "ExpressPCBSetup.exe" file if you like and then execute it.

You will not need to use their ExpressSCH program which is for schematic
generation. You will only need to use the program called "ExpressPCB.exe"

Read their various HLP files such as "ExpressPCBQuickStart.hlp".

I would recommend that you first familiarize yourself with the program using
another file that can be messed up with impunity - one that will never be
be submitted to ExpressPCB. Once you're comfortable with the program. Read
this again for the submission procedure:

http://www.expresspcb.com/ExpressPCBHtm/HowWorks.htm

Before doing the submission, if you use a software firewall, like ZoneAlarm.
I'd suggest disabling it during the submission.

I also suggest you trial run the submission using:

1. "Layout/Compute Board Cost" - if successful it should report the cost which is currently $62 for three miniboards - US only.
2. "Layout/Test Ordering Boards Via the Internet" - if successful, it should report "You are now ready to place an order for your custom PC board."

Also note that in #1, they do allow ordering from lots of countries, BUT the miniboard option is greyed out for some countries. Outside the US, it appears that ExpressPCB will process this board using their "Standard Service" or "ProtoPro Service" at higher prices. **However, as noted above, these other services at ExpressPCB should be used ONLY if the silkscreen and both solder mask layers in the "VNAV1A.PCB" are modified by a knowledgeable user.**

Then, assuming all conditions are acceptable, hold your breath and place the order using "Layout/Order Boards Via the Internet".