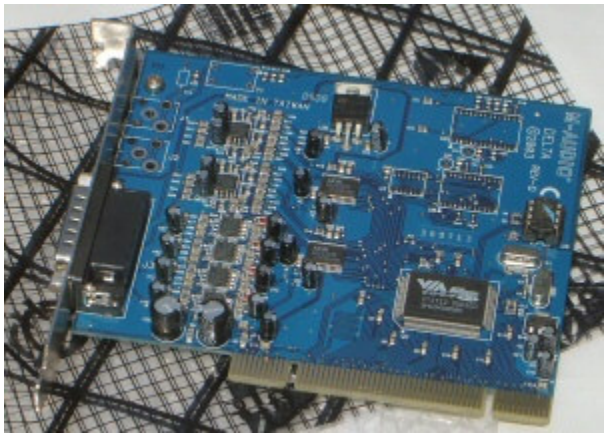
Delta 44 Quick Start Guide

The M-Audio Delta 44 is a high grade professional sound card. When setup properly for use with the SDR-1000, the results speak for themselves. Unbelievably high dynamic range and crystal clear audio with this card when combined with the versatile SDR-1000 results in an ear pleasing experience that is out of this world.

This page is designed to help you setup your new Delta 44 sound card for use with the SDR-1000. Below you will find a step-by-step guide (7 steps) along with tips for getting the fastest support. If you have questions that are not addressed in this guide, the [Flexradio] Email Reflector and the Flex-Radio-Friends Teamspeak Server are available for fast, friendly support.

CAUTION: It is extremely important to use the settings in the Delta Control Panel as described below in order not to damage the SDR-1000 hardware due to overdriving the audio. Make sure the output is set to -10dBv as shown in the screenshots below.

The OEM version of the Delta 44 that FlexRadio ships comes with three components: A PCI card, the "breakout" box, and a cable to connect the two. We optionally ship the four sets of cables necessary to connect the sound card to the SDR-1000 (1/8" stereo to dual 1/4" balanced).



PCI Card

Step 1: Install the PCI card

While a complete discussion of installing PCI cards is outside the scope of this quick start guide, there are many resources available on the web just using a google search. For more specific help, use the support methods mentioned above.

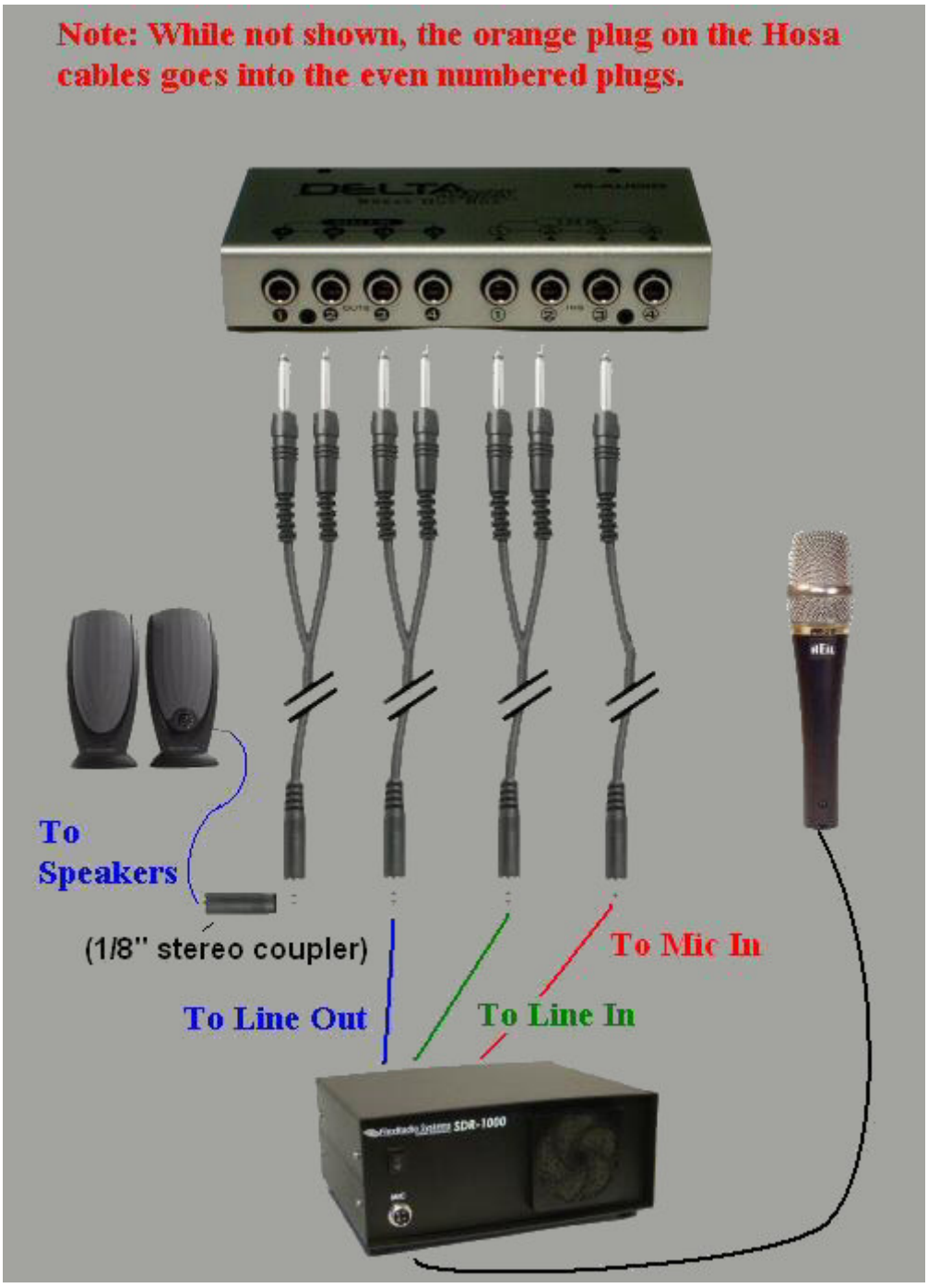
Breakout Box

Step 2: Connect the breakout box

Use the included cable with D-style connectors to connect the breakout box to the Delta 44 PCI card.

Step 3: Connect the cables

Use the diagram below to connect the breakout box to the SDR-1000 and your speakers. If making your own cables, note that the 1/8" tip connects to the odd numbered plugs while the 1/8" ring connects to the even numbered plugs.



Cabling Diagram

Note that the microphone can be connected either through the SDR-1000 enclosure (Mic to 4-pin connector on the front and the 1/8" stereo connector in the back going to the sound card Mic In) as shown -*OR*- it can be wired straight to the Delta 44 Input 3/4.

A 1/8" stereo coupler will be necessary to connect the speakers to Out 1/2 unless the speakers have a female 1/8" receptacle for the input. The same is true for connecting a PC microphone rather than using the front panel connector. Note that with the Delta 44, there should be not be a wire going to the plug marked "SPKR" on the back of the

enclosure.

For digital mode support see the following link for a modified diagram: Digital Mode Diagram. If using the digital setup, care should be taken to setup the second sound card mixer correctly. Make sure that the Line In Mute on the Playback mixer is muted.

Here is a functional description of each input and output from the Delta 44 break out box:

Out 1 & 2: -10dBV nominal stereo speaker/headphone output. This will normally be connected directly to either powered speakers or headphones. It will work also with un powered speakers but don't expect -10dBV to blow the doors off. We use headphones on this output with no problem. Windows sounds will play through this output if you have the Delta 44 set as the default sound card in the Windows Control Panel. You will need either a stereo coupler (barrel) or "Y" connector for this connection.

Out 3 & 4: This is -10dBV I and Q modulated audio going to the transmitter, which must be connected to the jack on the radio marked, "To Line Out." Failure to seat this connector properly will cause transmission of double sideband signals. Note that the speaker jack on the back of the radio is in parallel with the transmitter I & Q signals through a mute relay. This "SPKR" jack on the radio is ONLY to be used for consumer audio cards that do not have the number of outputs supplied by the Delta 44. It should NOT be used with the Delta 44.

In 1 & 2: This is +4dBU level I and Q from the down converted baseband receiver audio. This cable must be connected to the jack marked, "To Line In." Failure to fully seat this connector will cause loss of image rejection on the receiver.

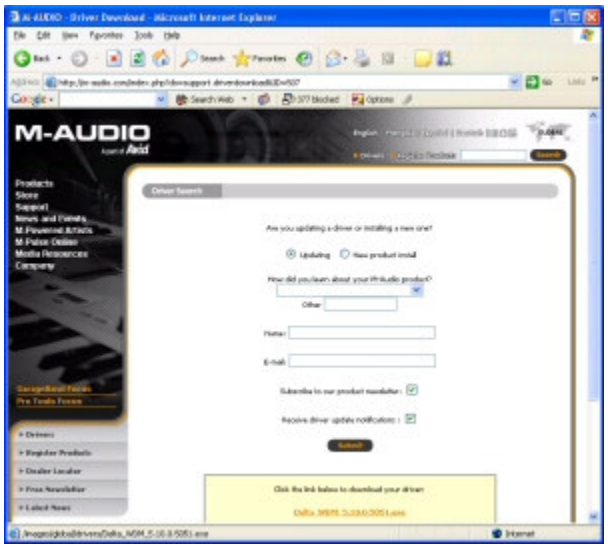
In 3: This is the -10dBV nominal microphone/digital mode input port. For normal operation it should be connected to the jack on the back of the radio which is just ABOVE the words, "To Mic In." The jack is a DIRECT connection to the front panel 4-pin microphone connector. The wiring table can be seen in the Operating Manual in Chapter 3: Pinouts. We have used this with a Heil Pro series microphone with success. If preferred, you can connect the microphone directly to In 3, bypassing the front panel connector.

In 4: This channel is not used. If using Hosa cables with dual 1/4" plugs, make sure to terminate this channel with the orange plug.

Step 4: Download the drivers

Now that you have the sound card hardware installed, it is time to help the operating system understand how to talk to it. Use the following link to get to the driver download page on the M-Audio website: **Link** Optionally fill out the requested info (not necessary) and then click on the link in the yellow box to download the driver. Once downloaded, run the file to install the drivers. It may be necessary to reboot after the installation is

complete.

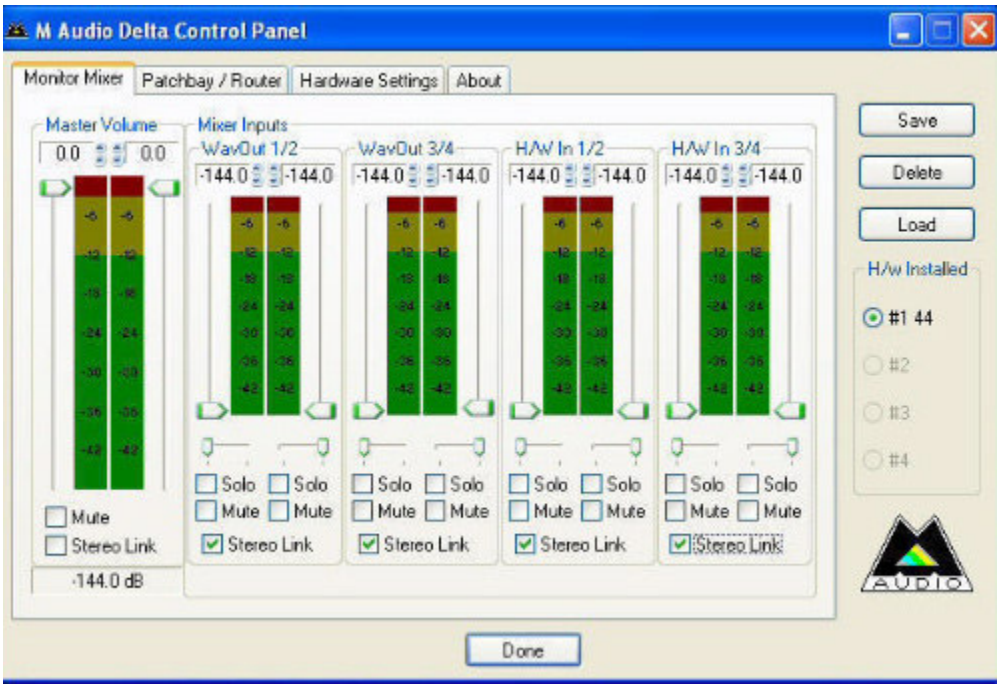


M-Audio Website

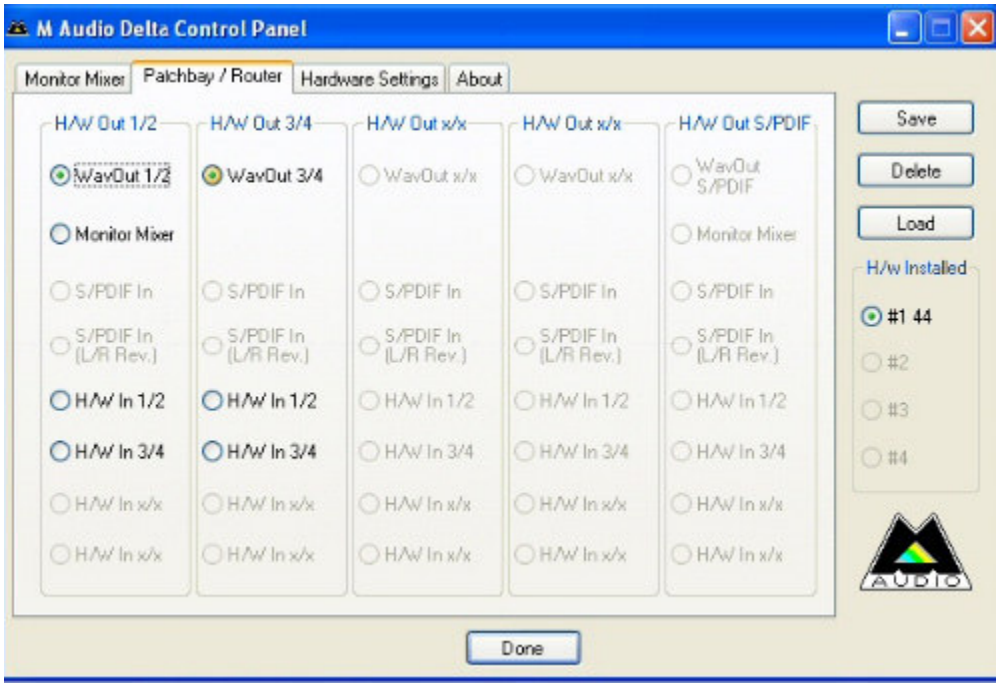
Step 5: Setup the Delta 44 Control Panel

Once the driver has been installed, the Delta 44 Control Panel will show up in the taskbar (lower right hand side of the screen). Click on the icon (shown below) to open the control panel and use the following screenshots to setup the controls.

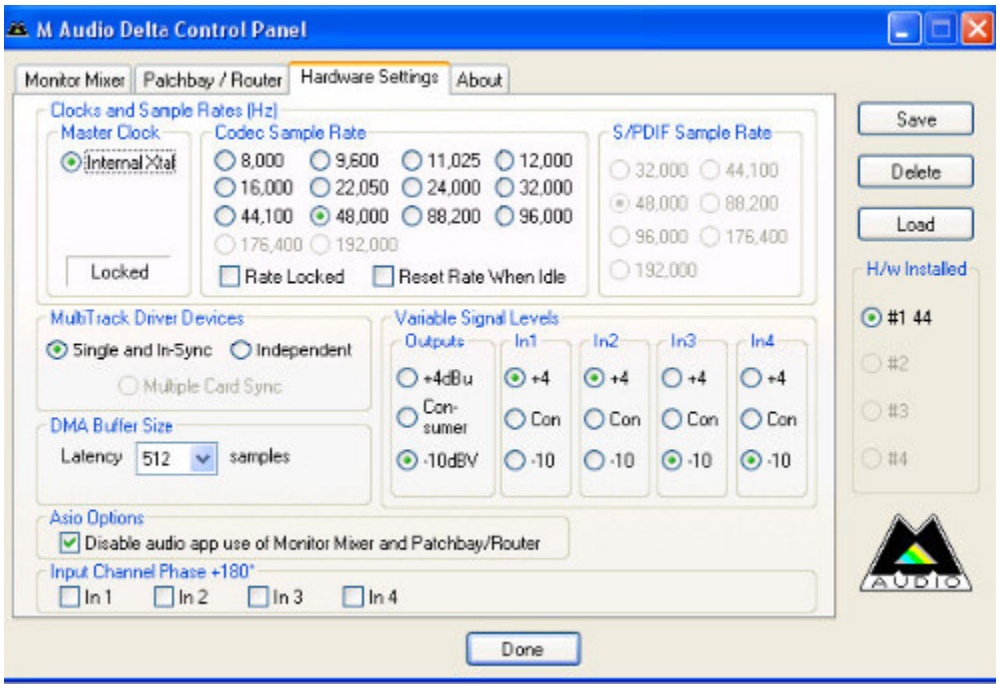
Taskbar Icon



Delta 44 Control Panel - Monitor Mixer Tab



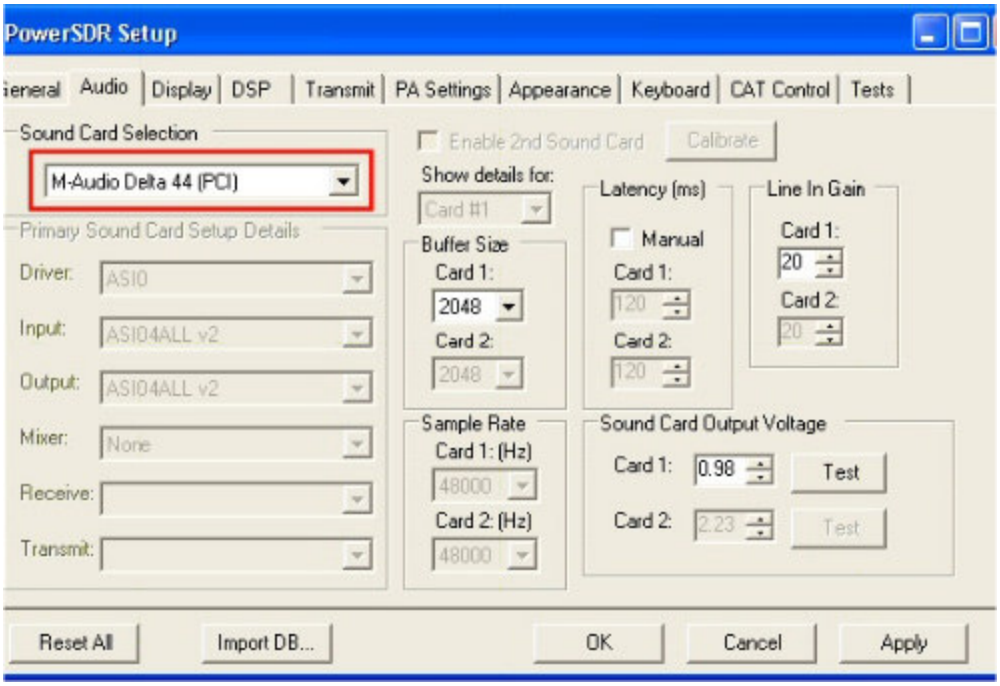
Delta 44 Control Panel - Patchbay / Router Tab



Delta 44 Control Panel - Hardware Settings Tab

Step 6: Setup the PowerSDR Software

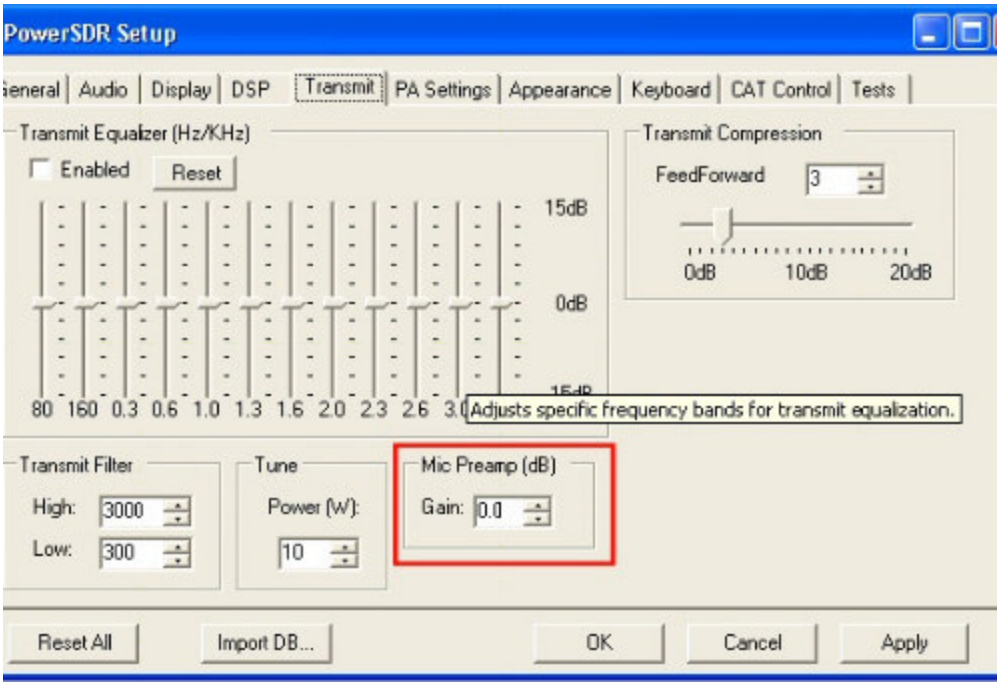
Now that the Delta 44 sound card is completely setup, it is time to setup the PowerSDR software to use it. ***Note that the Delta 44 is supported only in versions Beta 1.3.2 and later.*** Later versions may have these controls in different locations. Click the Setup menu to pull up the Setup Form and click on the Audio Tab. Select the M-Audio Delta 44 (PCI) from the Sound Card Selection combobox (see the figure below). Once selected, click the Apply button and then click OK to close the Setup Form.



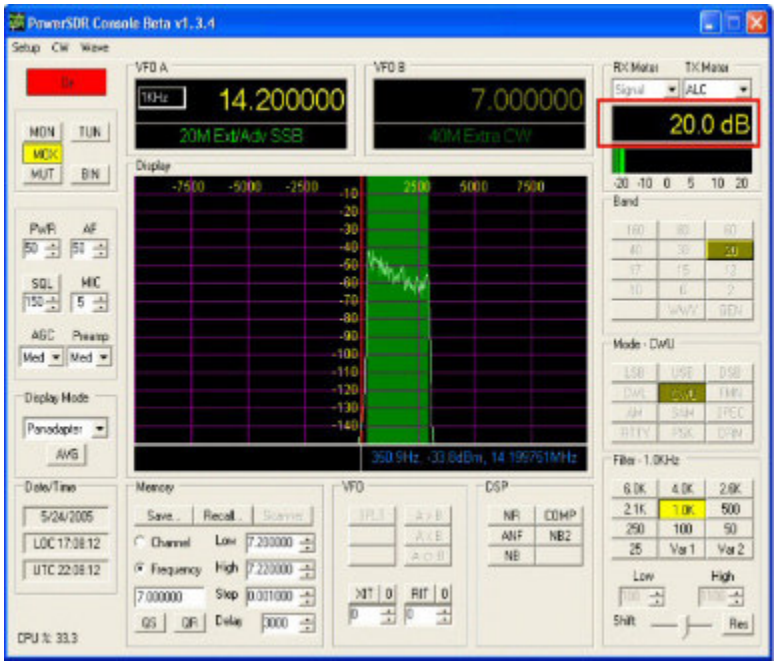
PowerSDR Setup Form - Audio Tab

Step 7: Calibrate the microphone input

Open the Setup Form and click on the Transmit Tab. Keep this form open while returning to the front panel. Select ALC on the TX Meter in the upper right corner. Make sure the compressor (COMP) is turned off, and click the MOX button to begin transmitting. Speak in a normal voice and adjust the Mic Preamp (see figure below) until the voice peaks are right at 0dB on the multimeter (figure below).



PowerSDR Setup Form - Transmit Tab



PowerSDR - ALC

This concludes the Delta 44 Quick Start Guide. At this point you should be able to receive and transmit with the Delta 44. If you are still having problems, please refer to the support links mentioned at the top of this guide.

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