

THE COMPUTER CORNER

No. 186: Monitors (Panels)

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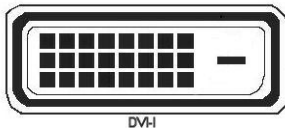
OK, Jack (N9SFG) bought a new computer and it has funny looking video connectors for the monitor. Can he use his old VGA monitor? Probably. Should he? Not if he can help it. Lets explore all this so that you and Jack know the options and what is best.

Here is your VGA connector as seen on the cable that was attached to the back of your old computer. It has 15 pins. The cable may be missing one or more unused pins, but all 15-pin sockets are present in the connector on the back plate of your computer.

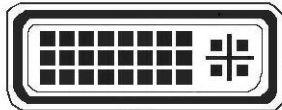


A key is that VGA is an analog system. That is, while it uses RGB (red-green-blue) to construct colors on the screen, each can be displayed at up to 64 levels of intensity, providing up to 262,144 possible colors (64^3) by mixing. Lots of colors are important because our eyes see a better picture with more. Up to 256 different colors can be displayed at one time with a basic VGA monitor. The point is, though, that VGA cards or chips in the computer output an analog signal, and your monitor must be capable of accepting an analog input.

Newer computers may or may not have a VGA connector. If they do, you can plug your old monitor and cable into it and you are home free, though you will be using an old, analog monitor. If they do not, the connectors will usually be one of the two digital types shown here. If you have a DVI-I connector on the back of your computer, you can purchase a little adapter that will plug into it and accept a VGA cable from your old monitor. If you have just the DVI-D style, you have no choice; you must use one of the newer digital flat panels to plug into it.



DVI-I



DVI-D

There is a significant **disadvantage** in using a newer flat-panel LCD monitor to plug into your new computer using a VGA connector and adapter (or to a VGA connector if your computer has one built-in). Remember, VGA is analog, and the two other types shown here are digital. When a digital panel connects to a VGA port (or adapter card), the digital signal in the PC's display adapter is converted to an analog signal and sent out over the cable as analog data. When it reaches the monitor, the data is converted back to digital data by the electronics inside the monitor. This back-and-forth conversion, digital to analog to digital, causes a loss of signal quality. Therefore, it is most desirable to have a purely digital signal all the way from the computer to the monitor. So, if you have a new flat screen monitor, plug it directly into a DVI-I or DVI-D connector on the computer using the appropriate cable. Stay away from converting it to VGA if you can, even though conversion will work with the proper adapter and a DVI-I port.

You already know some of the advantages of an LCD flat-screen monitor, compared with the old VGA CRT (Cathode Ray Tube) monitor. LCDs weigh less and are thinner since they have no large glass CRT vacuum tube, and they use less power and generate less heat. They also provide a high precision image because each pixel is addressed directly. They don't have problems with halos around on-screen objects, or pincushion effects or barrel distortion. And they don't suffer distortion from nearby electromagnetic low frequency emissions. And, they are relatively inexpensive. Depending, of course, on the size and brand, today you can find a new LCD panel for under \$100 that will give you a great image. Indeed, you would be hard put to find a VGA monitor these days because manufacturers are not making them anymore (insofar as I am

aware). Progress has brought us a significantly improved way to interact with our computers.

Happy Computing!

"There is no likelihood man can ever tap the power of the atom." Robert Millikan, Nobel Prize in Physics, 1923