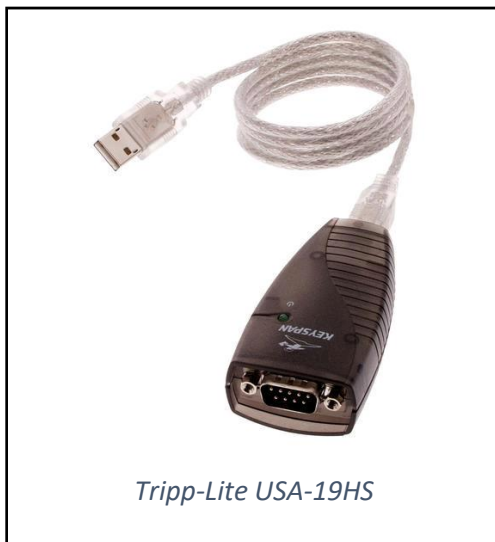


USB-to-Serial Adapter Recommendations

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A lot of vintage equipment used by hams (and some newer equipment like inexpensive GPS receivers) is equipped to communicate with a PC or laptop via an RS-232 serial port. Since few computers sold today have serial ports, an adapter is needed to attach the serial device to a USB port on the computer. This is usually a cable having a USB plug on one end and a DB9M connector on the other. A USB-powered circuit in the connector housing at one or the other end of the cable does the protocol conversion.



You can also buy a DB9-to-DB25 adapter if your peripheral device has a 25-pin serial connection. You need to check connector polarities carefully when ordering adapters, because not all equipment manufacturers follow the same standards.

USB-to-serial adapters are widely available in the \$20 to \$35 price range. Like other USB devices, these adapters require a Windows driver that is loaded by the operating system when it is plugged into a USB port. There are two vendors that make “chipsets” that are used in most brands of USB-to-serial converters: Prolific and FTDI. Each has a proprietary driver.

And here the story takes a wicked turn. A number of companies sell cheap USB-to-serial adapters that use inexpensive chipsets that are clones of either the Prolific or FTDI chipset. When you plug one of these cloned devices into a Windows computer, Windows recognizes it

as a Prolific or FTDI device and obtains the appropriate driver from the Prolific or FTDI website, and installs it automatically – the magic of Windows “plug’n’play technology.

However, Prolific and FTDI view these cloned devices as infringing on their proprietary designs. So, several years ago, to counter what they contend is piracy, Prolific modified the design of their driver software so that it can distinguish their device from a clone. This new driver essentially ignores cloned chipsets – leaving you dead in the water with no hint of why. I guess Prolific figures that you will throw away this “defective” adapter and buy a brand-name adapter next time around.

To add insult to injury, if you succeed in downloading an older Prolific driver that works with your Prolific clone adapter (or use the one that came on a CD when you bought the device), Windows Update might notice that you are using an out-of-date driver and unhelpfully update it to the latest driver, which of course makes your adapter inexplicably stop working. Sad to say, this has happened to me.

It’s unclear to me how this punishes the pirates. Instead, it punishes the consumer who unwittingly buys an adapter containing a cloned chipset. And these adapters are widely sold.

I learned from Chuck KB3FKH, that FTDI went one step further and developed a driver that reprograms the EEPROM of an illegitimate device, thus putting it out of commission permanently. Following a consumer outcry, however, they backed off from this policy and took the extra step of taking their adapters out of the Windows automatic update program, so that consumers who successfully installed a copycat device could use it indefinitely.

In some cases, FTDI’s chipsets work with the serial driver that comes preloaded in Windows. And since FTDI adopted a more consumer-friendly stance to dealing with clones, buying a USB-to-serial adapter from a reputable manufacturer that advertises that it has the genuine FTDI chipset is highly advisable. One product I have used successfully is Gearmo Model FTDI-LED. This unit has status LEDs that show you when there is activity on the serial port – very helpful for troubleshooting. It comes with a detachable USB cable. This model works with every packet radio TNC I have ever used.

However, even the FTDI chipset has trouble with really, really old serial devices, like systems used to program vintage Part 90 (commercial/public safety) radios. The only USB-to-serial adapter that I have found that works with this legacy hardware is Tripp-Lite Model USA-19HS. I have read that it uses a chipset developed by Texas Instruments (TI). It also comes with a Windows proprietary driver, but I have never heard of anyone having trouble with that driver. So I recommend that you include one of these in your go-kit.

if you want to be prepared for any eventuality, download several different drivers onto the laptop that is part of your go-kit. Better yet, put them on a thumb drive. If you run into problems with a mystery adapter, you can quickly install the appropriate driver. I recommend having the following drivers available, if not installed on your laptop. (I have several of these

drivers installed on my laptops and they don't seem to conflict with each other, but I make no guarantees!) These products are very mature, so it is unlikely that the drivers will be updated.

- Prolific Legacy Driver Version 3.2.0.0, available here:

http://www.miklor.com/COM/UV_Drivers.php

(This is a legacy Prolific driver that works with most Prolific clones – as long as Windows Update doesn't replace it! The Miklor website is operated by a ham and has a sterling reputation within the ham community. Scan it with your virus checker to be safe – a good practice with any downloaded files.)

- Prolific latest version driver (for genuine Prolific chipsets only):

http://www.prolific.com.tw/US/ShowProduct.aspx?p_id=225&pcid=41

(The Prolific website is very opaque, but this driver will work with most legitimate Prolific USB-to-serial chipsets.)

- The current recommended Windows-certified driver from the FTDI website:

<https://www.ftdichip.com/FTDrivers.htm>

(I have never encountered an FTDI clone myself, but it's clear from my reading that they do exist. If you buy an adapter, try it with a driver downloaded from this website before taking it into the field. That should ensure that you won't experience problems.)

- The latest driver for the Tripp-Lite model I mentioned:

<https://www.tripplite.com/support/USA19HSC>

Last but not least, our hospital installations using the Kenwood TM-D710GA radios also employ a USB-to-serial adapter both for programming the radio and for connecting to the built-in TNC. These adapters have an 8-pin mini-DIN plug at the radio end in place of the older-style DB9 connector. Some hospitals use a USB-K5G adapter from RT Systems, which uses an FTDI chipset. I recommend downloading a driver downloaded from the RT Systems website to be safe. You might also encounter a less-expensive after-market adapter, which will probably use one of the drivers listed above. I have seen them advertised with both the Prolific and the FTDI chipsets, but I stick with FTDI.

One of the reasons we practice is so we can work out these kinks ahead of time, rather than waiting until we are in an emergency station.

Please provide any feedback on this information to the MCACS [webmaster](#).