

How to get a DAT/EM TouchPad working when the USB connection doesn't work and the computer does not have a physical 9-pin serial port

Introduction

The TouchPad is a legacy keypad-like device manufactured by DAT/EM Systems International. There were about 100 of them manufactured and sold throughout the world. Most TouchPad parts are no longer available, but as long as the internal circuitry, controller box, and glass surface are still in good working order, you may be able to get it working with DAT/EM Capture software.

With recent operating systems, the TouchPad's USB interface does not work with the originally supplied USB cable, the correctly named DAT/EM driver, and Windows 7, 8.1, or 10. Symptoms are that during the Keypad Controller's Tools > Device Settings > TouchPad > "Configure button positions for Datem TouchPad" setup process, the three required button presses don't work at all, seem to be delayed, or activate two button hits per press. This makes it impossible to register and calibrate the corners. DAT/EM ("we") looked at the strings being sent through the USB on button presses, and they are not valid.

The serial connection always works; however, most computers are sold today without a 9-pin serial port on the chassis.

Note: If the computer actually has a physical serial port and it is not being used, the customer ("you") can plug directly into the TouchPad Serial connection and do not need the USB to serial adapter.

The solution is to use the serial connection at the TouchPad controller box with a USB to Serial adapter cable. This allows the working serial communication method to be used, yet it plugs into a USB port.



Example of a serial to USB converter cable

Part Needed with Hints for Purchase

We purchased the USB-Serial Adapter at Best Buy for USD \$20, because it was the only one available in Anchorage, Alaska.

Depending on where you place the TouchPad controller box, you may need a longer cable than 1 foot/0.3m (6 feet/1.8m would probably be better). You may either buy a longer converter cable or plug a shorter one into the original TouchPad serial cable.

Here is the link to the adapter we tested:

Insignia USB to RS-232 Serial Adapter with a 1 foot cable:

https://www.bestbuy.com/site/insignia-1-3-usb-to-rs-232-db9-pda-serial-adapter-cable-black/5883029.p?skuld=5883029&ref=212&loc=1&extStoreId=1760&ref=212&loc=1&ds_rl=1266837&gclid=EAlaIqObChMlqPf4stfX4QIVD8JkCh3iDgi2EAQYASABEgJChfD_BwE&gclidsrc=aw.ds

Most of the adapters available that list support for Win 7 and Win 10 should work. Try to avoid the ones with FTDI chipsets, since there may be some conflict with a Stealth mouse or a DAT/EM Keypad, if either is connected now or potentially connected in the future.

There are less expensive models that would probably work just as well (but we have not tested them). For example, here is one on Amazon:

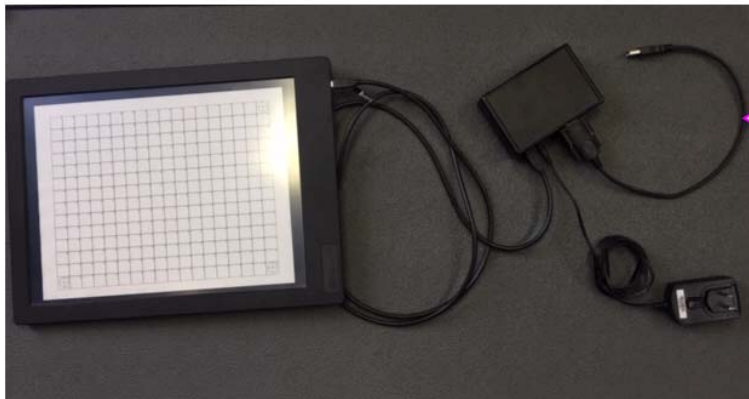
USB to RS232 Adapter with PL2303 Chipset, CableCreation 6.6 ft USB 2.0 Male to RS232 Female DB9 Serial Converter Cable:

https://www.amazon.com/dp/B0769DVQM1/ref=sspa_dk_detail_1?psc=1&pd_rd_i=B0769DVQM1&pd_rd_w=XSq4d&pf_rd_p=46cdcfa7-b302-4268-b799-8f7d8cb5008b&pd_rd_wg=GSYvk&pf_rd_r=WZC4ZC03HWT8VCJZM80Z&pd_rd_r=6db964aa-6138-11e9-bb40-b11ab2c84204

Configuration Steps

The USB to Serial adapter works by plugging the adapter into the serial port on the TouchPad controller and then plugging into a USB port on the computer. The resulting virtual COM port must be reset to COM1, COM2, or COM3.

1. Attach the cables as shown below (including the power plug into a power outlet!)



New serial to USB converter cable.

This cable may be longer or may be plugged into the TouchPad's original serial cable to make it longer.

A longer serial to USB adapter cable may be used, or, as an alternate lengthening method, plug the original TouchPad serial cable into the TouchPad's controller box and the short adapter into the serial cable.



New serial to USB converter cable connects to USB port on the computer.

9-pin serial end of original serial cable connects to TouchPad controller box.

Another way to lengthen the cable is to plug it into the original TouchPad serial cable, and plug the serial cable into the TouchPad's controller box.

2. Set the switch on the TouchPad controller box to serial (ser).



Set the switch to “ser”

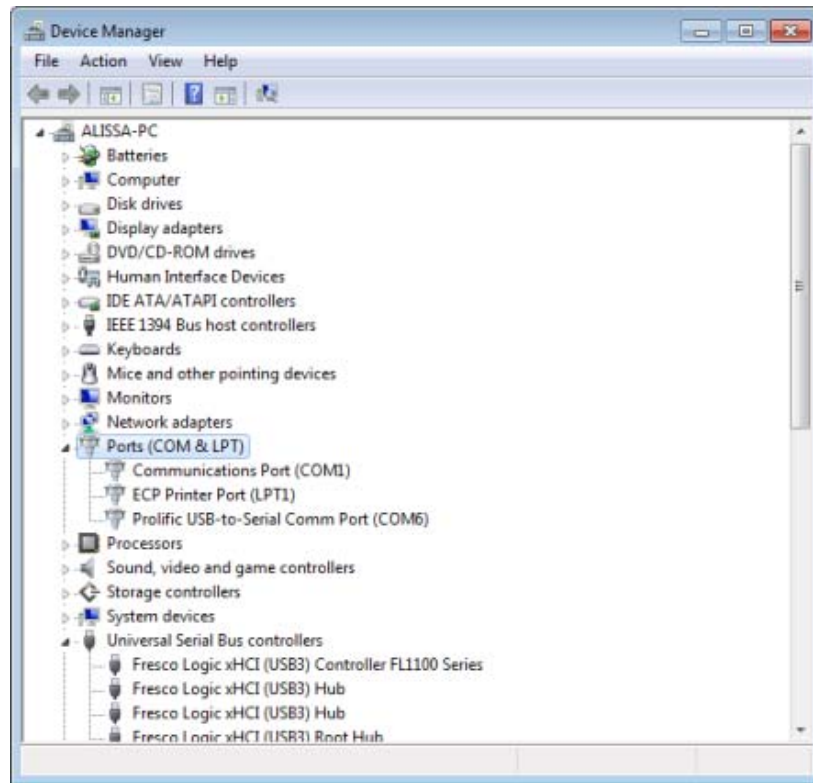
3. Plug the serial to USB converter into the computer’s USB port.

In our tests, Windows 7 and 10 found and installed the drivers automatically and created a virtual COM port when the new configuration was plugged into a USB port. Windows 7 was quite slow to do this, but eventually succeeded.

As long as the computer is connected to the Internet, you do not need to install a driver manually.

However, do not expect it to work right away after automatically installing the driver. It will probably install as COM 5 or COM6, but the TouchPad can only work with COM1, COM2, or COM3. In our test cases, we had to change the COM port number from 5 or 6 (where Windows 7 and 10 installed it) to COM 2.

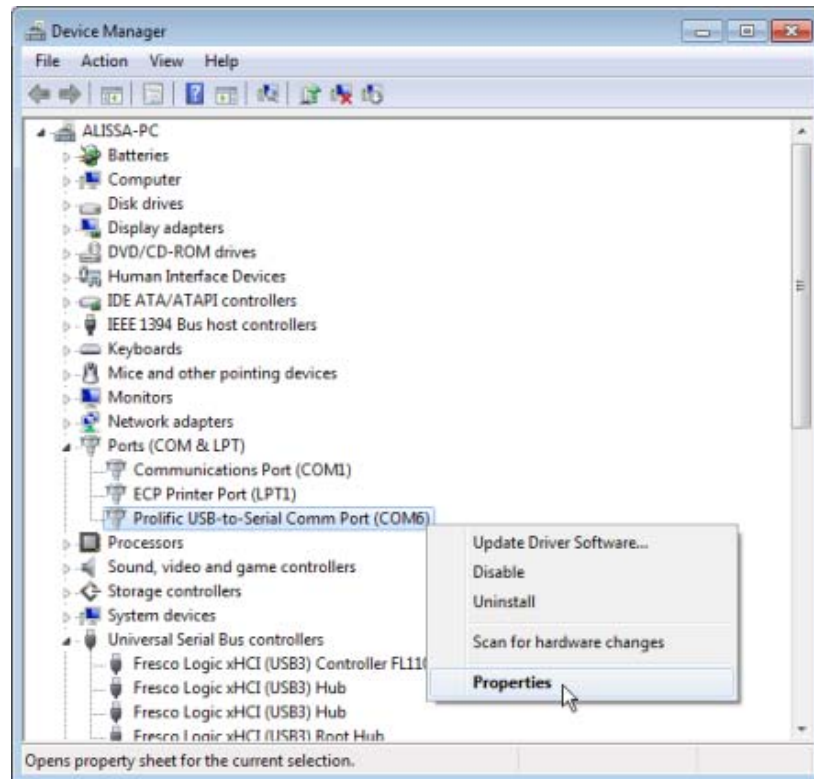
4. Check the COM port number, and change it if it is any other number than 1, 2, or 3. Open the Control Panel > Device Manager > Ports (COM&LPT) list:



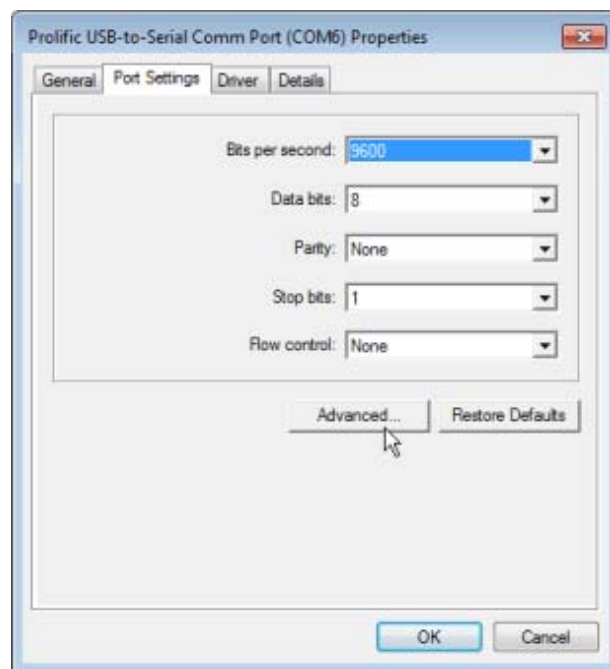
Example: In our test, “Prolific USB-to-Serial Comm Port (COM6)” appeared here.

It should show a new COM port - usually COM 5 or COM 6 and listed under the manufacturer.

Right click on the new COM port > Properties > Port Settings tab:



In Port Settings, the Baud rate (Bits per second) should be 9600.



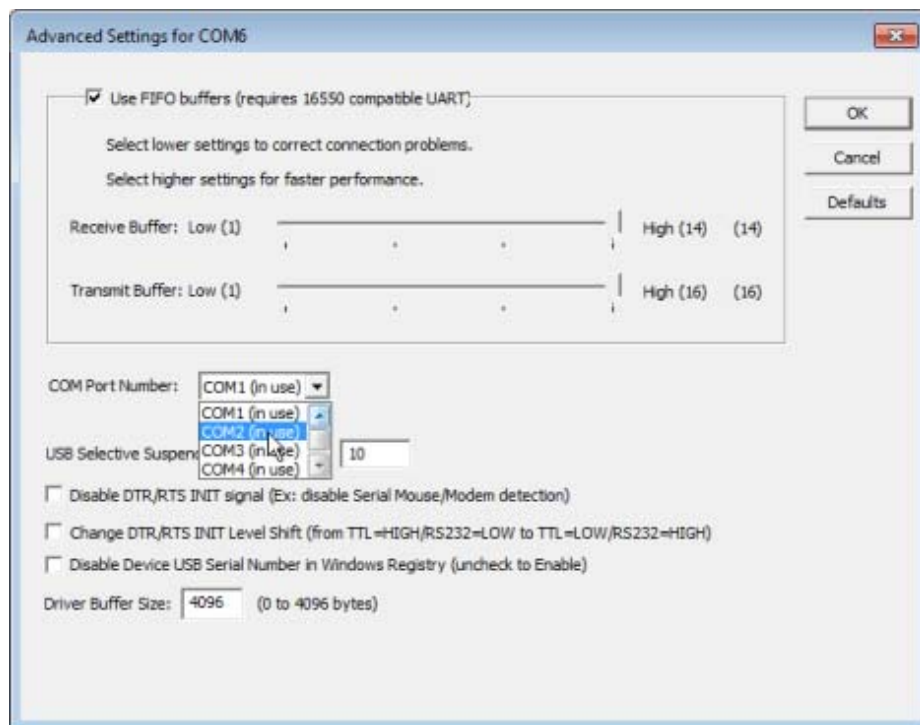
Bits per second: 9600

Select the **Advanced** button and change the COM Port Number to 1,2, or 3, if any of these are listed as open. Usually we would recommend selecting COM 2 or 3, because if the computer actually has a physical COM Port, it defaults to COM 1.

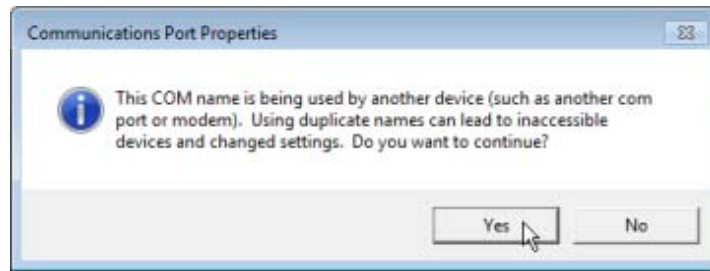
If all of the Com Ports 1-3 are listed as “(in use)”, you must check whether this is really true. Do you have any devices plugged in that might be using a physical or virtual COM port?

- A virtual COM port would be from a device plugged into a USB port, but would appear as a virtual COM port in Device Manager.
- A Stealth Mouse or other 3D input device for Summit sometimes sets up a virtual COM port, so you could check Summit > Tools > Options > Input Devices and check the COM port used by the Stealth mouse or other *checked-on and working* input device. Review any third-party devices attached to COM or USB ports.
- If you happen to make any changes to hardware or driver configurations or COM port configurations to free up a COM port, *you must reboot* and then check this again!

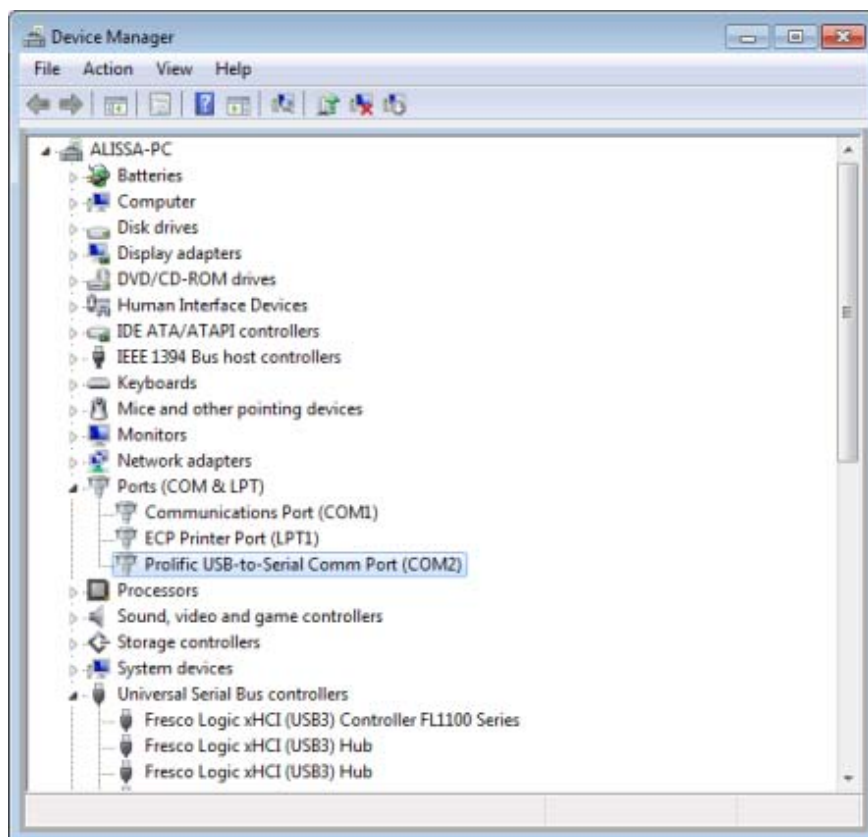
If any “(in use)” ports 1, 2, or 3 are not really in use, then select one of them anyway. In this example, we have already checked that no device actually uses COM2, so we select COM2:



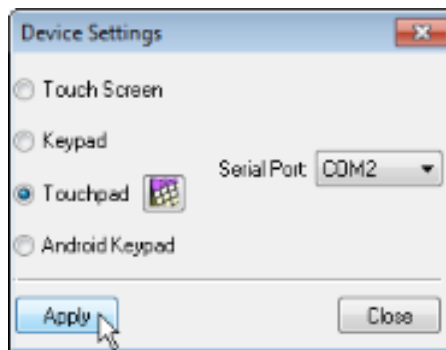
If you have selected an “(in use)” COM port, it will give a message about being in use. You have already checked that it is not actually in use. Answer Yes.



5. After selecting the COM Port 1, 2, or 3, **reboot the computer**. Do not skip or delay the reboot. COM ports are not plug-and-play; they require a reboot in order to configure correctly.
6. If desired, after rebooting, check Device Manager again and verify the COM port was retained. Here, it shows COM2 retained successfully.

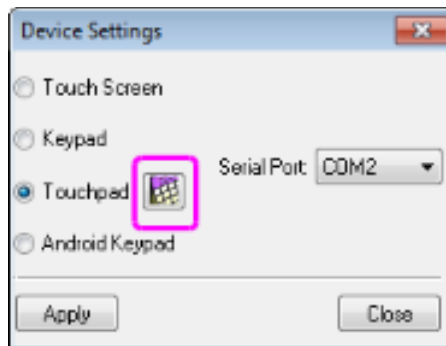


- Open the Keypad Controller and select Tools > Device Settings> TouchPad. Set **Serial Port** to the COM Port number you configured above, and select **Apply**.

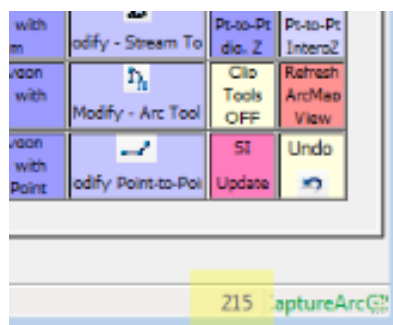


(Do not close this dialog yet)

- Select the Keypad Controller's Tools > Device Settings > TouchPad > "Configure button positions for Datem TouchPad" button. Follow the directions to press the upper left, upper right, and lower right buttons. This calibrates the surface area of the TouchPad.



- Test the result. With the Keypad Controller visible on the computer monitor, press any key on the TouchPad. The selected key number should be printed in the lower right corner of the Keypad Controller when the key is acknowledged (any key larger than 1X1 will properly show the number of its upper left key). If the correct key number appears when the key is pressed, you know it is ready to use.



Key 215 has been pressed and acknowledged