

Application Note # 0570.3: *The use of USB to RS232 converter*

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1. Introduction.....	1
2. Solution.....	1
3. Testing.....	1-2
4. Issues.....	2-3

## 1. **Introduction**

Some notebook computers now being manufactured do not have a serial (RS232) port, such as Dell Latitude LS and Sony Vaio. The serial ports are being replaced with the USB (Universal Serial Bus) interface.

Some Inmarsat terminals, however, including mini-M Inmarsat-C and GAN MPDS use an RS232 port to connect to a notebook PC for data communications.

A notebook without an RS232 (serial) port and only a USB, may therefore pose a problem

Also a desktop PC's RS232 port might be in use for other purposes, leaving only the USB port free.

## 2. **Solution**

There are a few products in the market that have a solution to this problem.

They are referred to as USB-Serial Converters.

Inmarsat has tested two of these products:

- USB-Serial Converter for Windows 98/2000 and MAC  
Model: UC-232A
- Xircom USB to 9-pin Serial Converter DB9
- Belkin Serial Adapter F5U103

## 3. **Testing**

The above USB-Serial converter products recommended have been tested with Nera / Thrane & Thrane mini-M terminal models as well as Thrane & Thrane GAN unit for packet data communications.

## USB to RS232 Converter

Windows 2000 is the operating system that was used. The tests were successful. Applications such as e-mail and web browsing were successfully attempted.

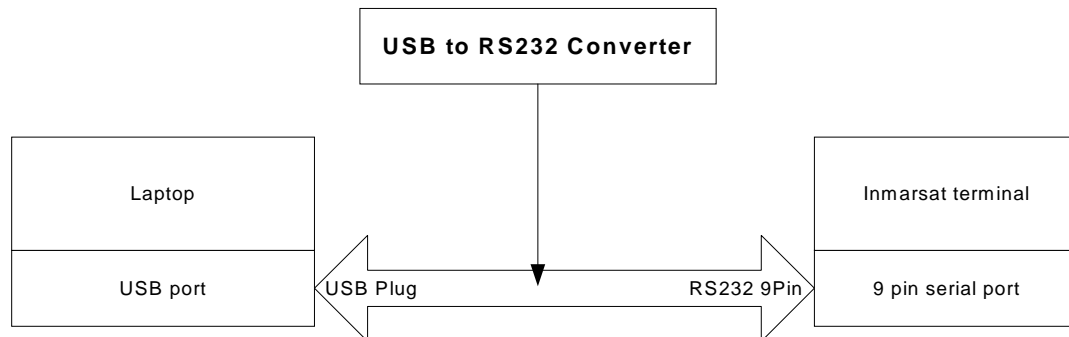


Figure 1: example of connection between a notebook pc and an Inmarsat satellite terminal using a USB to serial converter.

### 4. Issues

We found that the retaining pins on the UC232A cannot be removed (please see figure 2). This proved difficult to connect to the serial 9 pin ports of both Inmarsat GAN and mini-M terminals.

The solution to the above is simple. A serial cable (9 pin) was used. One end of the cable was connected to the Inmarsat terminal's serial interface and the other to the RS232 end of the converter cable.

With this solution, Inmarsat was able to avoid the issue of the non-removable retaining pins on the UC232A model.

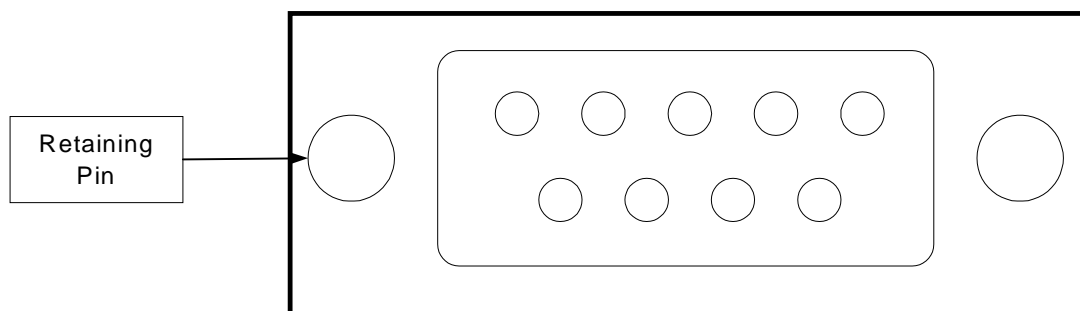


Figure 2: example of a 9-pin RS232 interface.

## USB to RS232 Converter

Tests have still to be carried out with Apple Macintosh OS.

Sometimes the USB port is not enabled on notebook PCs or desktops. The user should make sure that it is. Sometimes it is necessary to go into the BIOS to enable USB support.

The USB to Serial converters can also be used with Inmarsat-B for low speed data. It is important to note that the DTE port on Inmarsat-B (used for data) is a 25-pin interface. A 9 to 25-pin adapter is needed to connect a PC to an Inmarsat-B using the USB serial converter.

The USB to Serial converters can also be used when connecting a notebook PC to an Inmarsat-C unit.

For further information or assistance please contact:

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