

TechNote TN-081202-06 (Rev A)
Date: January 7, 2004
Applies to: VCS Async, Async Plus, Viewer, CommX
Subject: Using our software on Dell computers

Dell Desktop and Laptop Serial Port Anomalies

All of Greenleaf's software products are designed and intended for use with serial port hardware that faithfully implements the functionality of a real UART, e.g. 16550, 16650, and others.

Manufacturers of computers and motherboards, including Intel, include UART functionality in one of the ASICs (Application Specific Integrated Circuits) in the "chipset." Most do present an interface equivalent to a real 16550 UART, but for whatever reason, some do not. In recent months, we at sysFire have encountered a large cluster of users who experience difficulty up to and including total failure, on recent Dell machines.

We are trying to isolate just *which* Dell machines are affected. Because of the relative size of Dell, one of the largest and most successful computer makers, and sysFire, we are not receiving much help from Dell. The reason for this we believe is because our software usage represents such a small portion of total serial port use on Dell machines around the world.

In any event, if you have a Dell machine built in the last two years, and are experiencing problems, especially with VCS Async, Async Plus, Viewer, or the Pro versions of these, our advice is to find a different make computer to run VCS. If you are unable to do this, we can offer some support and in isolated cases we've been able to get people up and running, but not in all.

A Fix for This

sysFire now has a set of serial drivers that support a range of single and multiple port cards from Quatech. The table below shows the hardware options. If you experience difficulty using the internal serial ports on a Dell machine, consider using one of these cards. sysFire also sells the cards at a discount to VCS Async customers.

The drivers are available from this website (see the VCS site MAP) free. The set of drivers must be installed a certain way, so there is an illustrated paper to help with that; the set contains both standard and VCS enabled versions of the drivers. See TechNote TN-010104-01 for more information.

VCS Async Compatible Hardware from Quatech					
Model	No. Ports	Spec	Bus	Max Baud	Cable
SSP-100	1	EIA-232	PCMCIA	921.6	Detached
SSPR-100	1	EIA-232	PCMCIA	921.6	Attached
SSP-200/300	1	EIA-422/485	PCMCIA	921.6	Detached
DSP-100	2	EIA-232	PCMCIA	921.6	Detached
DSPR-100	2	EIA-232	PCMCIA	921.6	Attached
DSP-200/300	2	EIA-422/485	PCMCIA	921.6	Detached
QSP-100	4	EIA-232	PCMCIA	115.2	Detached
DSC-100	2	EIA-232	PCI	921.6	Board edge
DSC-200/300	2	EIA-422/485	PCI	921.6	Board edge

Internal Modems

While we're on the subject of ASIC problems, you should be aware that a great many internal modems (and some external ones) do not present a standard UART interface. The rationale for this, we believe, is that the task of moving data from a PCI bus to an RJ-11 modem jack can be approached variously. Some makers go the "safe" route, starting with PCI-to-UART (perhaps in the chipset itself) and then implementing a modem following that.

Others bypass the UART interface entirely. The notable example of this is the so-called "WinModem" which is so named because it is purely internal, is installed in Windows as a modem, not a serial Port (though some do indicate I/O and IRQ resource parameters same as a UART would, e.g. COM3. This technique of cost reducing the manufacture of internal and PCMCIA modems has for the most part met with success – but not with software such as VCS which absolutely depends upon talking to a UART, however the logic is implemented.

Where did the Real 16550s Go?

Well, no computer made in the past 5 to 10 years has an actual 16550 or any other UART IC. Instead, as mentioned above, the logic is incorporated into the chipset. The question is how equal is the logic in the chipset (registers, meaning of bits, commands, etc.) to that of a "real" UART.