

## IDENTIFYING THE MICROCOMPUTER AND SIGNATURE OF AN UNKNOWN FLASH REMOTE

Tommy N. Tyler

26 February 2011

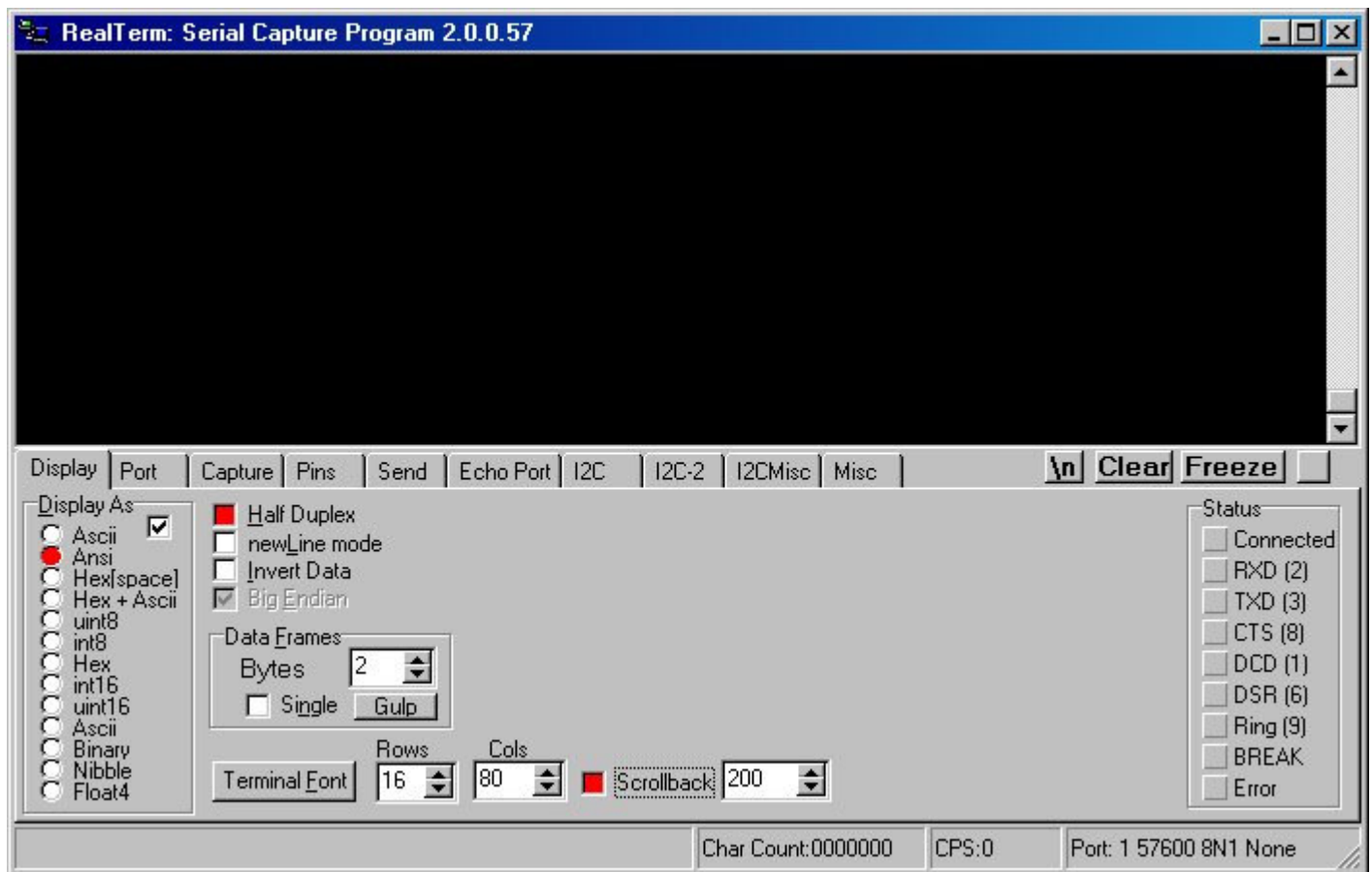
These instructions tell how to use a Flash Interface cable to identify the type of microcomputer used in an unknown remote, as well as the remote's signature. IR.exe is not used. You will need to download and install a free software utility called **Realterm**, available from <http://realterm.sourceforge.net/> . This is an excellent Serial Terminal program that is much more versatile than Windows' Hyperterminal, and can be useful for troubleshooting flash interfaces.

Once you have **Realterm** installed, open **Device Manager** and expand the line called **Ports [COM & LPT]**. Watch that list as you plug in your USB JP1.2/3 (Flash) Interface. When Windows recognizes the interface it will rewrite the list with a new device at the end called **USB Serial Port [COMx]** , where "x" is the COM port assigned to the interface.

Connect the interface to your remote and press a few numeric buttons and verify that the remote is transmitting.

When you start **Realterm** you'll see the display shown below. The upper black window is for data, and the lower half shows the configuration tabs, with the **Display** tab selected.

Click on the three boxes labeled **Ansi**, **Half Duplex**, and **Scrollback** (shown in red).

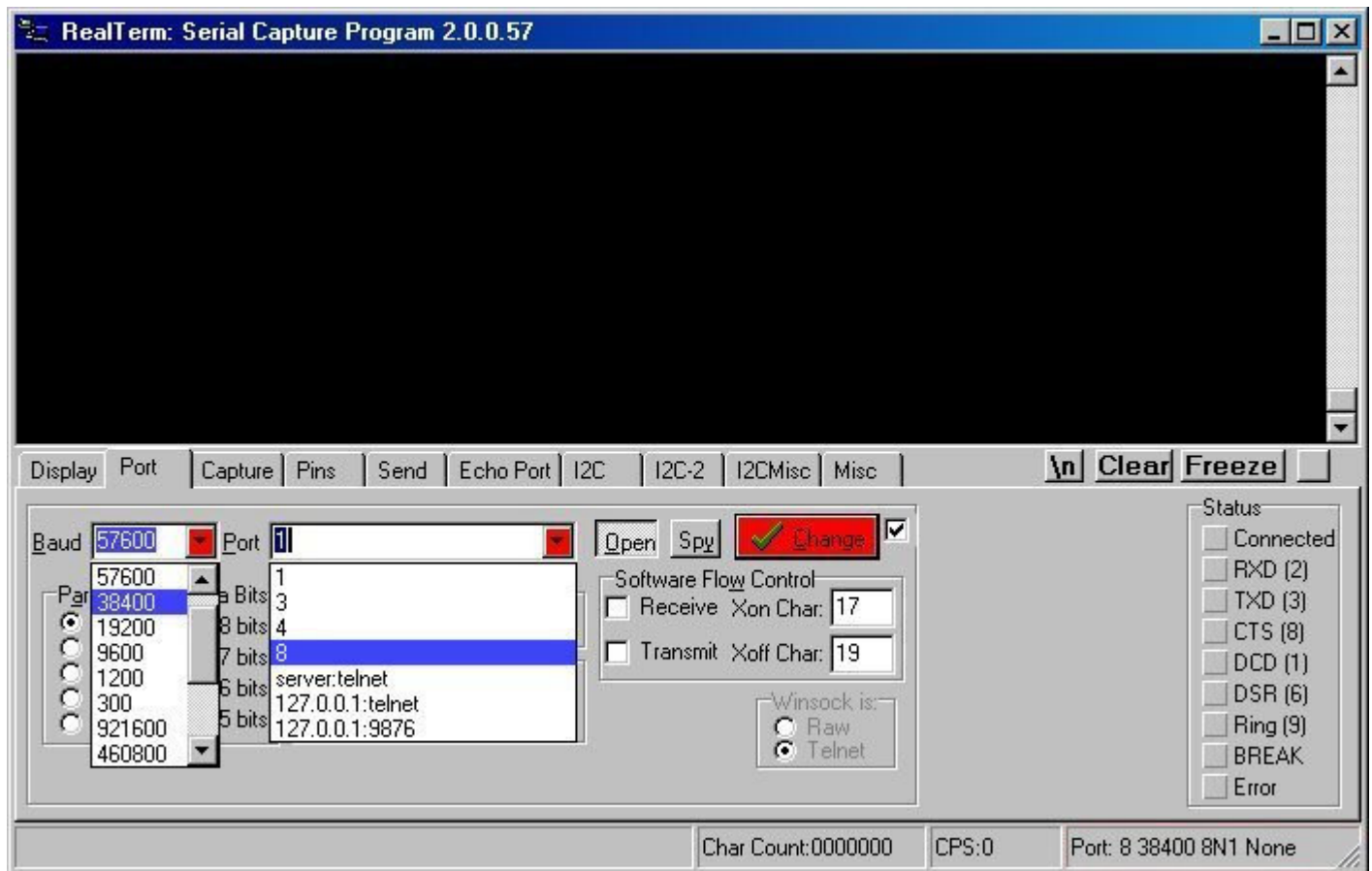



As you can see in the lower right corner, **Realterm** defaults to **Port 1** at **57600** baud. We'll change that.

Select the **Port** tab.

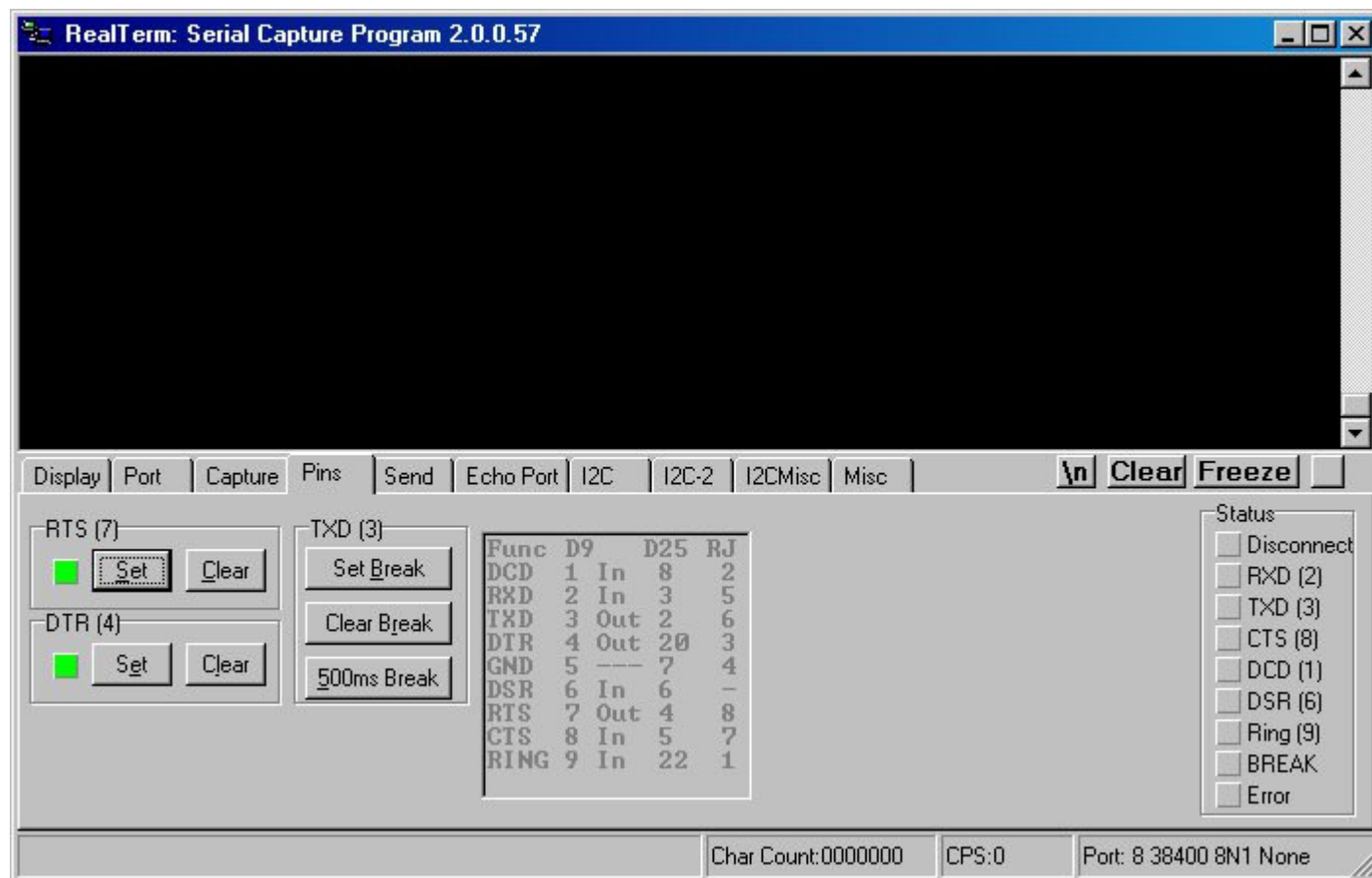
Drop down the **Baud** list and select **38400**.

Drop down the **Port** list and select port "**x**".



Click on the button marked  **Change**, and verify that the window in the lower right corner changes to **Port: x 38400 8N1 None**.

Select the **Pins** tab and note the two green indicators showing the state of the **RTS** and **DTR** control lines.



As long as the **RTS** indicator is green the remote is being held reset and its keypad is inoperative. Click on the **RTS Clear** button to turn **OFF** the green indicator, and note that the remote's indicator flashes twice to indicate it has come out of reset and resumed normal operation.

With the green **RTS** indicator **OFF**, press the **TXD Set Break** button, then the **RTS Set** button, then the **RTS Clear** button, and finally the **TXD Clear Break** button, in that exact order.

You're looking for two indications that this sequence switches the remote out of normal operation mode and into serial communications mode. The first indication is that the remote's indicator **DOES NOT** flash twice when reset is removed by clearing the **RTS** signal (green **RTS** indicator turns off). The second indication is that the remote is inoperable and does not respond to pressing any of its keys.

To return the remote to normal operation you need to reset it by pressing just the **RTS Set** button followed by the **RTS Clear** button. Try taking the remote into and out of serial comm mode several times to convince yourself it's really working.

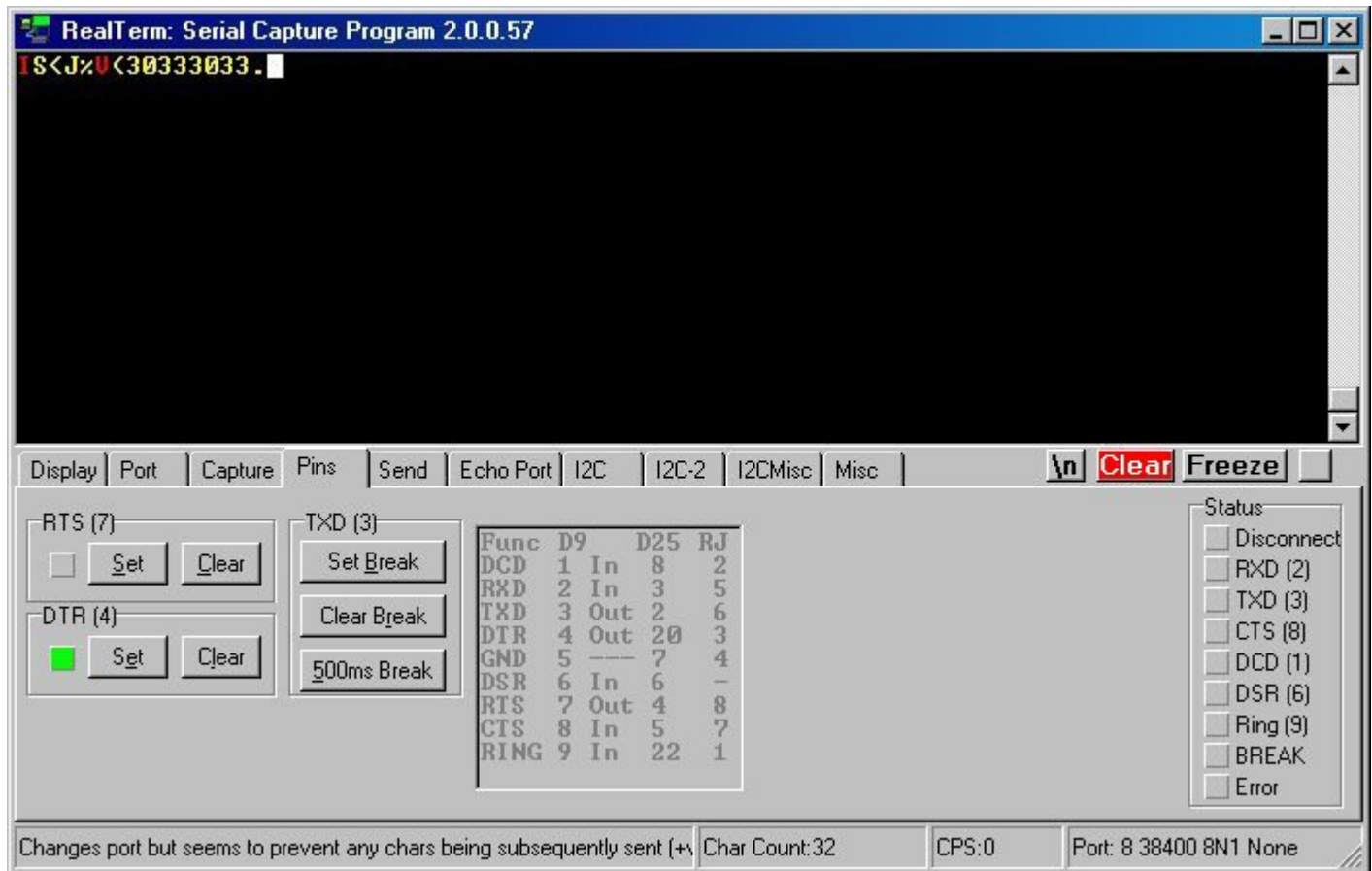
We know that types JP1.2 and JP1.3 remotes have this serial comm mode, which is the way they upload and download with IR.exe. We are not sure about JP1.4 remotes. If the remote appears to go into serial comm mode that's a good sign, and you should continue with the test. But if the remote's indicator flashes twice and the keypad remains fully operational following the above sequence, it indicates you were unable to switch it into serial comm mode, and there's no point in going any further with the test.

Leave the remote in serial comm mode while you continue with the test.

Click on the **Clear** button (shown in red below) to get a blinking cursor at the upper left corner of the black window.

Type a capital "I" on the PC keyboard. If your interface has LEDs, the red one will flash to indicate the "I" command was sent to the remote. Almost simultaneously the green LED will flash to indicate the remote responded, and the remote's message appears in yellow on the screen. In the example shown the response is "S<J%", which indicates the type of microprocessor used in the remote.

Type a capital "V". This time the response is "30333033", which is the remote's signature.



You should not experiment with other commands because there is a danger of corrupting the remote's memory.

The remote will remain in serial comm mode indefinitely until you reset it, and in that mode it draws more current from the batteries than the normal sleep current. So when you are through testing, be sure and return the remote to normal operation before storing it away. While the interface is still connected, the easiest way to reset the remote is with the RTS **Set** and **Clear** buttons as described previously. If you forget and have disconnected everything, you can also reset it by temporarily disconnecting one end of a battery.