

8n1

L.Lucius

COLLABORATORS

	<i>TITLE :</i> 8n1		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
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REVISION HISTORY

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Chapter 1

8n1

1.1 8n1.device ~© by L.Lucius

8n1.device - By L.Lucius

A replacement for the standard serial.device
and based on v34serial.device.

~Distribution~~	What you can do with this
~Disclaimer~~~~	Blah Blah Blah
~Background~~~~	Why I decided to take on this task
~Installation~~	Just follow these simple instructions
~Compatibility~	Differences between 8n1.device & serial.device
~Thanks ~	For the bug reports and suggestions
~Feedback/Bugs~	All reports good or bad are needed
~NComm Note~~~~	A note to NComm 3.0.? users
~Change~Log~~~~	A list of all changes made to 8n1.device

1.2 Distribution

You may use or misuse this program in any way you like.

1.3 Disclaimer

I will not be held responsible for ANY loss incurred by this program.

1.4 Background

When "v34serial.device" showed up on Aminet, I was excited, because all I ever used was 8N1 and RTS/CTS. That was it. I didn't need parity or XON/XOFF or breaks and thought that if the device didn't have to worry about all that

then it would be faster.

Well, I used it for awhile, but every now and then it would cause GURUs, so I went back to "artser.device" and forgot about it.

Until a little while ago, when I found out that I would be getting a SLIP connection to the net.

I wanted something faster than "artser.device" and with less overhead. So I went to debugging "v34serial.device" and wound up rewriting the whole thing.

The end result is a minimal serial device replacement that tries to keep system overhead at a reasonable level.

1.5 Installation

Simply copy 8n1.device to the DEVS: directory and tell your communications software the new name. NComm users read this!

If your communications software is unable to accept the name of the serial device to use, get the file on Aminet called SerPat20.lha in the hard/drivr directory. It will give you this capability.

!!!IMPORTANT!!!

If you have two or more programs that share the serial port, make sure you change ALL programs. Otherwise, you will probably get a visit from some guy called GURU. (Thanks Juan!)

1.6 Compatibility

8n1.device should be compatible with the "serial.device" as long as the following options are the only ones used: B-)

- 8 data bits
- No parity
- 1 stop bit
- RTS/CTS handshaking
- No handshaking
- EOFMODE

It also supports sending breaks, but not receiving them.

If you need something else, let me know and I'll see what I can do.

1.7 Thanks for the bug reports and suggestions

Thanks to the following people for their reports, testing, and patience:

William Crawford IV

Mans Engman

Ayan George

Paul Harrison	Harold H. Ipolyi	Mathias Juvall
Alpay Kasal	George Kourkoutas	Laura
John Millington	Bryan Myers	Robert N. Olson
Greg Olstad	Ernest Otte	Koen Peetermans
Juan Ramirez	Michal L. Rybarski	George Sanderson
Orlando Santiago	Peter S. Struijk	Tinic Urou
Ashok Vadekar	Ronald van Eijck	Alexander Wild
Dwight Zenzano		

Let me know if I've missed anyone.

1.8 Feedback/Bugs

I have included the source in hopes that some other programmers can make suggestions. It's always better to have more than 1 eye (literally B^) looking at the code.

If you have problems or feedback I would be very glad to hear about it:

Email me at: llucius@millcomm.com

1.9 Note to NComm 3.0.? users

I spent over 2 weeks trying to track down a bug that I (and everyone else) thought was a bug in 8n1. I mean it made sense that 8n1 was the problem since ALL the other drivers worked, right? Well...

Using Stefan Pröls's excellent `serlog.device` and another program (and a lot of paper for debugging), I was able to determine that 8n1 was working the same as all the rest.

So, if it works the same then why the problem?

Well, the problem occurs when you try to upload using `zmodem`. One of the first things `zmodem` does is sync up with the other end. Part of this process checks to see if any characters have been transmitted by the other end. To do this, `zmodem` asks `NComm` how many characters are available and `NComm` tells `zmodem` that one character is ready to be read. But, there isn't and since `zmodem` doesn't know that, it reads a character and get's whatever happens to be at the beginning of `NComms` read buffer.

To further illustrate, here's the sequence of I/Os that `artser` goes through just prior to where the problem would occur:

```

CMD_READ (      ): OK, 1 of 1 byte
0000: 2A                                     "x"

SDCMD_QUERY (QUICK): OK
status:  $0004
buffered: 12

CMD_READ (QUICK): OK, 12 of 12 byte

```

```
0000: 18 42 30 39 30 30 30 30 30 30 30 30 30 30 30 30 ".B09000000000"

CMD_READ (QUICK): OK, 1 of 1 byte
0000: 61 "a"

SDCMD_QUERY (QUICK): OK
status: $0004
buffered: 6

CMD_READ (QUICK): OK, 6 of 6 byte
0000: 38 37 63 0D 0A 11 "87c..."

CMD_READ ( ): aborted, 0 of 1 byte
0000: ""
```

And here's the sequence that 8n1 goes through:

```
CMD_READ (QUICK): OK, 20 of 20 byte
0000: 2A 18 42 30 39 30 30 30 30 30 30 30 30 30 30 30 61 38 37 "*.B09000000000a87"
0010: 63 0D 0A 11 "c..."

CMD_READ ( ): aborted, 0 of 1 byte
0000: ""
```

As you can see they are slightly different, but the end result is the same.

However, looking at the second to last READ of each, you will notice that in artser's case the character at the beginning of the buffer is an "8" and in 8n1's case an "*" is at the beginning. This is the character that NComm wrongly returns to zmodem and since zmodem considers the "*" special, it will constantly tries to resync with the other end. Thus, the problem.

SO WHO CARES! Just tell me how to get around it.

Well, I've included a special version of 8n1 for NComm users. Simply rename "8n1.device.ncomm" to "8n1.device" and place it in you're DEVS: directory.

It gets around the problem by placing a NULL (0x00) byte at the beginning of the buffer when a READ is initiated. This DOES NOT correct NComm's bug. It only attempts to work around it.
