

New8n1

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COLLABORATORS

	<i>TITLE :</i> New8n1		
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REVISION HISTORY

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Chapter 1

New8n1

1.1 8n1.device © 1996-97 Iain Barclay

8n1.device - By Iain Barclay
was 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

000-040 notes

Notes on the different CPU versions

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.

And i started coding this because the original 8n1.device crashed my system sometimes (and i wanted to make it faster).

Iain

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

8n1.device was originally written & released by

L.Lucius
E-mail at: llucius@millcomm.com

He did all the hard work :)

Special note for '*Art'

Thanks for your great patch. I can't find your email address to ask permission to include your patch in this archive so i hope you don't mind, let me know.

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

William Crawford IV	Mans Engman	Ayan George
Paul Harrison	Harold H. Ipolyi	Mathias Juvall
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Ashok Vadekar	Ronald van Eijck	Alexander Wild
Dwight Zenzano	Stimpson	Andrew Bennett
Frank Wille	Oliver Jeannet	

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:

KNOWN BUGS

I have been told MOD players don't get on with 8n1 but have not had this problem myself.

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1.9 Note to NComm 3.0.? users

NOTE: I have not included an NComm version as i think NComm is sh**e get TERM it's much better.

You can easily recompile for NComm if you wish.

Iain

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 "*"
```

```
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 ".B0900000000"
```

```
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 61 38 37  "*.B0900000000a87"
  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.

1.10 CPU notes

The 000 device will work on chip only machines.

The 030 device will work on chip machines but works best with fast ram and the CopyMemQuicker patch installed

The 040 device needs fast ram and the CopyMemQuicker patch installed.

Well anyone that has an 040 should have fast right.

NB: If you have MCP installed then you don't need the CopyMemQuicker patch.