March 2026

noForth

Getting started with noForth t

1. Which noForth t do you use?

noForth t is for the RP2040 ARM microcontroller. There are the following variants:

```
t    tv    t#    tv#
t = noForth for  RP2040
v = with vocabularies
# = with multitasker
```

In addition, there is a tv# version with USB communication and a library.
There are two processors on one chip.

```
solo = noForth runs only on core-0
duo  = noForth runs on both cores,
       each with its own memory
```

Two ZIP files for noForth t can be found on the noForth website.
noForth t solo and noForth t duo with their variants.

2. Which board?

- Pico bordje (available from Kiwi Electronics)
- YD-RP2040 (available from AliExpress)
- RP2040 plus (available from Tinytronics)

These boards fit the Pico kit available from Forth-gg.

There is a USB CDC driver available that works on all boards, including these:

- RP2040-zero (available from AliExpress, among others)
- RP2040-micro (available from AliExpress, among others)

Boards where GPIO0 and GPIO1 are not wired are only suitable for USB but unsuitable for serial communication.

3. How do I get noForth on the board?

Read in howto RP2040 pico how to do that.

4. Terminal programs

```
Teraterm  (Windows)
Coolterm  (Windows/OSX/Linux)
GTKterm   (Linux)
...
```

Copy-paste and drag-drop work in these terminals. (Drag-drop does not work on GTKterm)
See also A.N.'s NO-IDE: https://home.hccnet.nl/anij/no-ide-nl.pdf

5. Communication with USB

All you need for communication is a USB cable.

Terminal settings

1. Open the terminal and go to settings.
2. Select the port.
3. Set baud rate to 115k2.
4. 8 data bits, no parity, 1 stop bit, and no handshake.
5. Set end-of-line delay to 1 millisecond.
6. Character delay is zero.
7. You do not need a local echo.
8. If the cursor does not move to the next line after pressing , you need to adjust the new line setting.
9. noForth only recognizes the backspace as an edit option. If necessary, you need to activate this in the terminal.
10. The carriage return settings must be set to 'cr'.

6. Communication with RS232

For communication with the RP2040, we use a USB to RS232 converter. There are various types available:

• Prolific: PL2303TA (Good and cheap from AliExpress)

```
Pin-1  = (GPIO0) White
Pin-2  = (GPIO1) Green
Pin-3  = (GND) Black
Pin-31 = (VIN) Red
```

When using the Pico kit, use the UART-0 connector. The order is (+5V) Red, (GND) Black, (TX) White, (RX) Green.

Other cables:
• OTRONIC: CP2102 (Bits & Parts, etc.)
• FTDI: FT232RL (AliExpress, etc.)

Terminal settings

Same as with USB, the only difference is:
5. Set end-of-line delay to 30 milliseconds.

7. TOOLS.F

On the noForth website, you will find the file noforth-t-tools.f containing the following words:

```
STOP?                   \ Stop, pause or continue
MANY                    \ Interactive loop
.S                      \ Print stack (non-destructive)
DMP ( addr -- )         \ Dump memory starting at 'addr'
WORDS                   \ Show words in current vocabulary
MSEE ( addr -- )        \ Start decompiling at 'addr'
SEE name                \ Start decompiling 'name'
.VOCS                   \ Show defined wordlists & vocabularies
.SHIELDS                \ Show all defined shields
[DEFINED] name          \ Leave true if 'name' exists
[UNDEFINED] name        \ Leave true if 'name' does not exists
```

These words are useful when developing a program, but they will not appear in the program itself. Once you have loaded them, you can make them permanent by executing FREEZE. They will then still be there the next time you start up.

 If loading fails, adjust the end line delay until it works.

In the USB version, the TOOLS are already loaded.

8. More files to load

On the noForth website, you will find an assembler and disassembler for RP2040. There is also a file called: "noforth t more words.f."
Other files can be found on the RP2040 noForth github page

9. General noForth documentation

The general noForth documentation applies to all processors for which we have noForth. Don't forget to read the extensive information on de noForth website.

Good luck! (November 2025)