

Microsoft BASIC Easter Egg

Commodore PET

Microsoft 6502 BASIC has its roots in the Commodore PET



Commodore bought MOS in October 1976 and worked on converting the KIM platform into a complete computer system. They licensed Microsoft BASIC for 6502 (also October 1976), renamed it to Commodore BASIC, replaced the “OK” prompt with “READY.”, stripped out the copyright string and shipped it in the ROMs of the first Commodore PET in 1977.

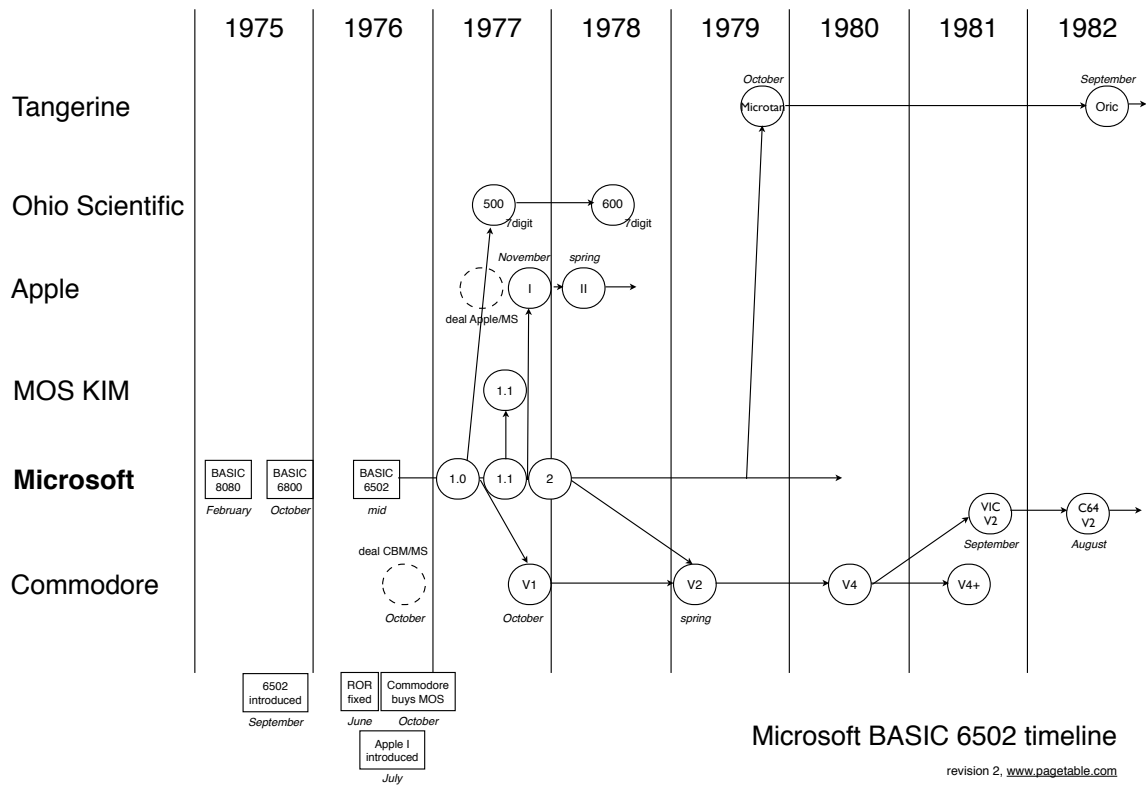
In 1979, Commodore started shipping update ROMs with a version 2 of Commodore BASIC for existing PETs. Apart from updates in array handling, it also contained what became known as the WAIT 6502 Easter egg.

If you type “WAIT6502,1” into a Commodore PET with BASIC V2 (1979), it will show the string “MICROSOFT!” at the top left corner of the screen. The Easter egg code does not print the characters through library routines, but instead writes the values directly into screen RAM. While BASIC used the ASCII character encoding, the Commodore character set had its own encoding, with “A” starting at \$01, but leaving digits and special characters at the same positions as in ASCII. Thus, when the 10 hidden and obfuscated bytes a1 54 46 8f 13 8f 52 43 89 cd has their two most significant bytes stripped becoming 21 14 06 0f 13 0f 12 03 09 0d and then reversed, on the PET they decode into:

MICROSOFT!

Although this particular version of the Easter egg was written for the Commodore PET, Microsoft did not encode its company name in BASIC specifically for Commodore: The 9 digit BASIC 6502 version 1.1 for the KIM-1 contained the 10 hidden bytes: The version of Microsoft BASIC for the 6502-based Apple II, called “[AppleSoft](#)“, contains the same 10 bytes

KIM-1 BASIC was released in 1977, AppleSoft II in spring 1978, and the V2 ROM of the PET in spring 1979. So Microsoft didn’t “target” Commodore with this at first, but probably put the data in for all their customers – possibly right after they had shipped the Easter egg free V1 to Commodore. And when Commodore came back to them, they changed their codebase to encode string differently and added the Easter egg code to show the string



The Easter Egg after the PET

After the second source drop to Commodore, they removed the “WAIT6502” code again, but kept the 10 encoded bytes in their master codebase: Every non-Commodore post-1978 6502 Microsoft BASIC with the 40 bit floating point library contains the 10 encoded bytes after the SIN() coefficients – still in PET encoding:

- Tangerine Microtan 65
- Tangerine Oric-1 and Oric-Atmos
- Pravetz 8D

This is a snippet from the Microtan Tanex H2 ROM:

```
0000fd8: 0f da a2 a1 54 46 8f 13  ....TF..
0000fe0: 8f 52 43 89 cd a5 d5 48  .RC....H
```

The ROM of the Ohio Scientific Superboard II (and its clone, the Compukit UK101) as well as the Atari Microsoft BASIC tape are based on the 32 bit floating point version and don't contain the easter egg data.