

Patch history: what Peter adopted in RC5 and RC6

PicoMite / WebMite V7.00.00 · as of 27 Oct 2026 · heap fix and PSRAM retime

- Peter adopted two patches: the **heap fix** and the **PSRAM retime**. Both were sent to him on 16 Oct in the package `7.00.00RC2-Fixes.zip`.
- He committed them on 23 Oct (commits `13b081e` and `b61ed31`). The first release with them is **RC5** (24 Oct). **RC6** (26 Oct) contains both unchanged.
- **Heap fix**: adopted in full. All 13 changes are identical character for character; only Gerad's explanatory comment was left out.
- **Retime**: structure and functions adopted, in a simplified form (section 3).

1. The two adopted patches

PATCH (VERSIONS)	WHAT IT DOES	SENT TO PETER	RC5 (24 OCT)	RC6 (26 OCT)
Heap RC2, RC3	13 "is the block in this heap?" tests changed from <code>></code> to <code>>=</code> . An array or string that starts exactly at the base of the SRAM or PSRAM heap is now freed by ERASE, CLEAR, REDIM PRESERVE and at the end of a SUB with LOCAL. Before, it stayed allocated until the next RUN, and string code then ran about 4 times slower. core/Commands.c, core/MMBasic.c, core/Memory.c, graphics/FrameBuffer.c	16 Oct, in the package, with HEAPLEAK.bas	adopted, identical Commit <code>b61ed31</code> (23 Oct), release notes <code>a79c5c3</code> . Peter's own measurement on the PC3: a string loop took 1972 ms with the bug instead of 583 ms, and 581 ms with the fix.	contained, unchanged Release notes: under "Fixed since RC3".
Retime RC0, RC2, RC3	The PSRAM timing (QMI M1) follows a clock change at run time (CPU SPEED, and RESOLUTION on HDMI). Before, booting at 200 MHz and then <code>cpu speed 320000</code> ran the PSRAM at 160 MHz, for a part rated 104 MHz. PicoMite.c, io/psram.c, io/psram.h	16 Oct, in the package, with CLOCKTEST.bas	adopted, simplified Commit <code>13b081e</code> (23 Oct), release notes <code>f5a1831</code> . Checked by Peter on the PC3 (M1 values at 315 and 378 MHz; a PSRAM array keeps its data).	contained, unchanged Release notes: under "Fixed since RC3". <code>io/psram.c</code> and <code>io/psram.h</code> are the same in RC5 and RC6.

 adopted, identical  adopted, with differences

2. Timeline

DATE	TIME	WHO	WHAT	BASE	CONTENT
16 Oct	15:03	Peter	RC2 released		The version the package to Peter is based on.
16 Oct	21:27	Gerad	<code>7.00.00RC0-Retime.patch</code>	RC0	First version of the retime.
16 Oct	21:37	Gerad	<code>7.00.00RC2-Retime.patch</code>	RC2	Same content as the RC0 version.
16 Oct	22:11	Gerad	<code>7.00.00RC2-Heap.patch</code>	RC2	The 13 heap comparisons.
16 Oct	23:02	Gerad	To Peter: <code>7.00.00RC2-Fixes.zip</code>	RC2	With retime, heap, CLOCKTEST.bas and HEAPLEAK.bas; covering text <code>7.00.00RC2-Post.txt</code> . Each patch applies on its own.

DATE	TIME	WHO	WHAT	BASE	CONTENT
20 Oct	11:49	Peter	RC3 released		Still without the two fixes.
23 Oct	18:31	Gerad	7.00.00RC3-Retime , 7.00.00RC3-Heap.patch	RC3	Both ported to RC3, same content.
23 Oct	21:05	Peter	Commit 13b081e : retime adopted		"PSRAM timing follows a runtime clock change (CPU SPEED, HDMI RESOLUTION)". All 18 variants built.
23 Oct	23:45	Peter	Commit b61ed31 : heap fix adopted		"A block at the very start of the SRAM or PSRAM heap is freed". All 18 variants built.
24 Oct	11:30	Peter	RC5 released		First release with retime and heap fix.
26 Oct	11:39	Peter	RC6 released		Retime and heap fix contained, unchanged.

Times are German local time (CEST until 25 Oct, CET after). Peter's times are converted from his git commits; "released" is the commit the release tag points to. Gerad's times are the file times in the Webmite Patch folder. Green: adopted by Peter; blue: sent to Peter.

3. What was adopted in detail

Heap fix (b61ed31): all 13 comparisons as in Gerad's patch

FILE	FUNCTION	PLACES	NEW COMPARISON (GERAD'S AND PETER'S)	COMPARISON
core/Commands.c	cmd_redim	2	addr >= (uint32_t)MMHeap , addr >= (uint32_t)PSRAMbase	identical
core/MMBasic.c	ClearVars	6	val.s >= (uint32_t)MMHeap and val.s >= (uint32_t)PSRAMbase , each with and without T_STRUCT and for VREC(i)	identical
core/MMBasic.c	erase	2	addr >= (uint32_t)MMHeap , addr >= (uint32_t)PSRAMbase	identical
core/Memory.c	FreeMemory	1	(unsigned char *)addr >= (unsigned char *)PSRAMbase	identical
core/Memory.c	MemSize	1	addr >= (void *)PSRAMbase	identical
graphics/FrameBuffer.c	cmd_framebuffer	1	LayerBuf >= (uint8_t *)PSRAMbase	identical

Only Gerad's explanatory comment above the comparison in `erase()` is missing; Peter kept the original "// Check if in heap" there.

PSRAM retime (13b081e): Gerad's structure, simplified in three places

PART OF GERAD'S PATCH	FILE	IN PETER'S VERSION
psram_timing() : the timing calculation as a function of its own, for a range of clocks	io/psram.c	adopted Same calculation for CLKDIV, MAX_SELECT and MIN_DESELECT, different variable names (fast_hz / slow_hz). RXDELAY follows the original rule for the faster clock instead of suiting the whole range.
psram_qmi_setup() takes the finished timing value instead of five separate values	io/psram.c	adopted, identical
Call in psram_init() : psram_qmi_setup(psram_timing(chip, sys_clk, sys_clk), csr_clkdiv)	io/psram.c	adopted, word for word

PART OF GERAD'S PATCH	FILE	IN PETER'S VERSION
<code>psram_retime()</code> : rewrites M1 at run time	io/psram.c, io/psram.h	adopted, simplified Writes at once, without waiting for a PSRAM transfer of core 1 or DMA in progress, and runs from flash instead of RAM. Peter keeps a pointer to the chip type; Gerad's version looks it up through a helper function.
Two calls in <code>CPUSpeedRuntime()</code> : before the switch a timing valid at both clocks, after it the exact one	PicoMite.c	adopted At the same places, the second word for word. In the first, Peter does not allow for the 48 MHz that <code>set_sys_clock_pll()</code> parks clk_sys on.

The simplifications only concern the few microseconds of the clock switch, and only if the PSRAM is accessed at exactly that moment. After the switch both versions write the same timing for the new clock. The code in detail is in `7.00.00RC6-Codevergleich.pdf` (German).

Sources: 7.00.00RC2-Heap.patch, 7.00.00RC2-Retime.patch and the RC0/RC3 versions in the folder F:\DeskTop\Webmite Patch; github.com/UKTailwind/PicoMite, tags PicoMite-V7.00.00RC2 to RC6, commits 13b081e, f5a1831, b61ed31, a79c5c3; RC6 `docs/V7.00.00_release_notes.md` . Code comparison checked on 27 Oct 2026.
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