WebMite RC3 vs PicoMiteHDMIWEB RC3

WeAct RP2350B with RM2 radio module · Findings of 23 October 2026 · Firmware V7.00.00RC3

Summary

- **WebMite RC3** boots on the WeAct RP2350B with the RM2. **PicoMiteHDMIWEB RC3** shows no COM port on the PC.
- This is by design on HDMIWEB: its USB-C socket works as a **host for a USB keyboard**, not as a COM port.
- The RC3 source contains nothing that would make HDMIWEB hang on this hardware.
- Without an HDMI monitor, the only way to check the boot is the **serial console on GP8/GP9**. This has not yet been checked on the hardware.

The board, from its flash backups

Read from the 16 MB backups `PICO/PH_Archiv/WEACTB_*.pib` (the OPTIONs saved under WebMite):

- **RM2 radio module:** on the default pins GP23, GP24, GP25 and GP29, with no `OPTION CYW43 PINS`.
- **PSRAM:** on GP47. **Clock:** 320 MHz. Some backups also have `OPTION PLATFORM PICO COMPUTER 3` set.

The radio pins therefore also suit HDMIWEB, which uses exactly these pins once its options have been reset.

The two builds compared

	WebMite RC3	PicoMiteHDMIWEB RC3
USB-C socket	Device; appears on the PC as a COM port	**Host for a USB keyboard; no COM port**
Console	USB	HDMI screen, and serial on **GP8 (TX) / GP9 (RX) at 115200 baud**
Saved options	–	**Fully erased** when switching from WebMite (WiFi, Telnet, PSRAM, CPU speed). The A: drive is kept on a 16 MB flash.
Clock after the reset	200 MHz; freely settable from 126 to 396 MHz	**315 MHz**; only 252 / 283.2 / 315 / 378 MHz, tied to the resolution
Reserved pins	–	**GP12–GP19, fixed for HDMI**
Radio module	Same code; GP23/24/25/29 by default	Same; started after the HDMI output
Radio SPI clock	Divider 4 at 320 MHz	Divider 4 at 315 MHz; practically the same
DMA channels	Radio on 0/1	HDMI on 0/1, radio on 2/3
Core 1	–	Generates the HDMI picture all the time
Memory	312 KB heap; programs up to 208 KB	208 KB heap + 96 KB frame buffer; programs up to 156 KB
PSRAM	Off after a reset	Off after the reset; set `OPTION PSRAM PIN GP47` again
WiFi	Credentials present	**None** after the switch, so no Telnet either
Options area in flash	From 1536 KB	From 1568 KB

highlighted = a difference you notice when switching

What happens on HDMIWEB's first boot

1. The options are erased and the board restarts.
2. It boots at 315 MHz with HDMI output on GP12–GP19, even with no monitor connected.
3. The sign-on banner and the prompt appear on HDMI and on GP8/GP9.
4. WiFi stays off, because no credentials are stored any more.

Without an HDMI monitor and without a serial adapter this looks as if the board does not boot. Windows Device Manager shows no new port; COM1 is the PC's built-in serial port.

How to check the boot

WeAct	USB-serial adapter
GP8 (TX)	RX
GP9 (RX)	TX
GND	GND

1. Connect a 3.3 V adapter and open a terminal at 115200 baud, 8N1.
2. Press RST on the WeAct.
3. Expected: `PicoMiteHDMIWEB MMBasic USB RP2350B Edition V7.00.00RC3`
4. Then set up WiFi again (`OPTION WIFI`) and the PSRAM (`OPTION PSRAM PIN GP47`).

Without an adapter, a second Pico running Raspberry Pi's official "debugprobe" firmware works too (UART on GP4/GP5). If nothing appears on GP8/GP9 either, the firmware really does hang, and further investigation is needed.

Side finding

> On HDMIWEB the radio gets DMA channels 2 and 3, because HDMI holds channels 0 and 1. Channel 2, however, is hard-wired in the code for ADC sampling (`ADC_DMA 2` in `configuration.h`). The ADC commands that use DMA would therefore disturb the WiFi link on HDMIWEB. This is unrelated to the boot problem.

Basis

Source: UKTailwind/PicoMite, tag `PicoMite-V7.00.00RC3` (commit ed13ce2), checked out locally under `Webmite Patch/rc2/pm-rc3`. Examined: `PicoMite.c` (boot sequence, pin table, options check), `misc/FileIO.c` (default options), `misc/FileIO.h` (options structure), `misc/Custom.c` (radio pins, PIO2), `configuration.h` (magic key, memory, clock, DMA), `CMakeLists.txt` (board, defines), and the radio driver of Pico SDK 2.3.1. The boot sequence did not change between RC2 and RC3. A test on the hardware is still outstanding.