

A close-up photograph of a Raspberry Pi 4 Model B single-board computer. The green PCB is populated with various components including a silver USB Type-C port, a black Ethernet port, two USB-A ports, a yellow HDMI port, and a black 40-pin GPIO header. A SanDisk Ultra II 2.0 64GB SD card is placed to the right of the board. The entire setup is on a dark, reflective surface.

RASPBERRY PI

NICO MAAS

PI AND MORE 14

WER BIN ICH?

- Nico Maas
- Master of Science
- IT Systemelektroniker
- mail@nico-maas.de
- www.nico-maas.de
- Mastodon: @nmaas87@chaos.social

AGENDA

- Einführung
 - Geschichte
 - Nur der RPi?
 - Woher der Erfolg?
- Erste Schritte
- Raspberry Pi in 2026
- Aktuelle (Vor)Warnungen
- Mehr Raspberry Pi
- Ende

EINFÜHRUNG







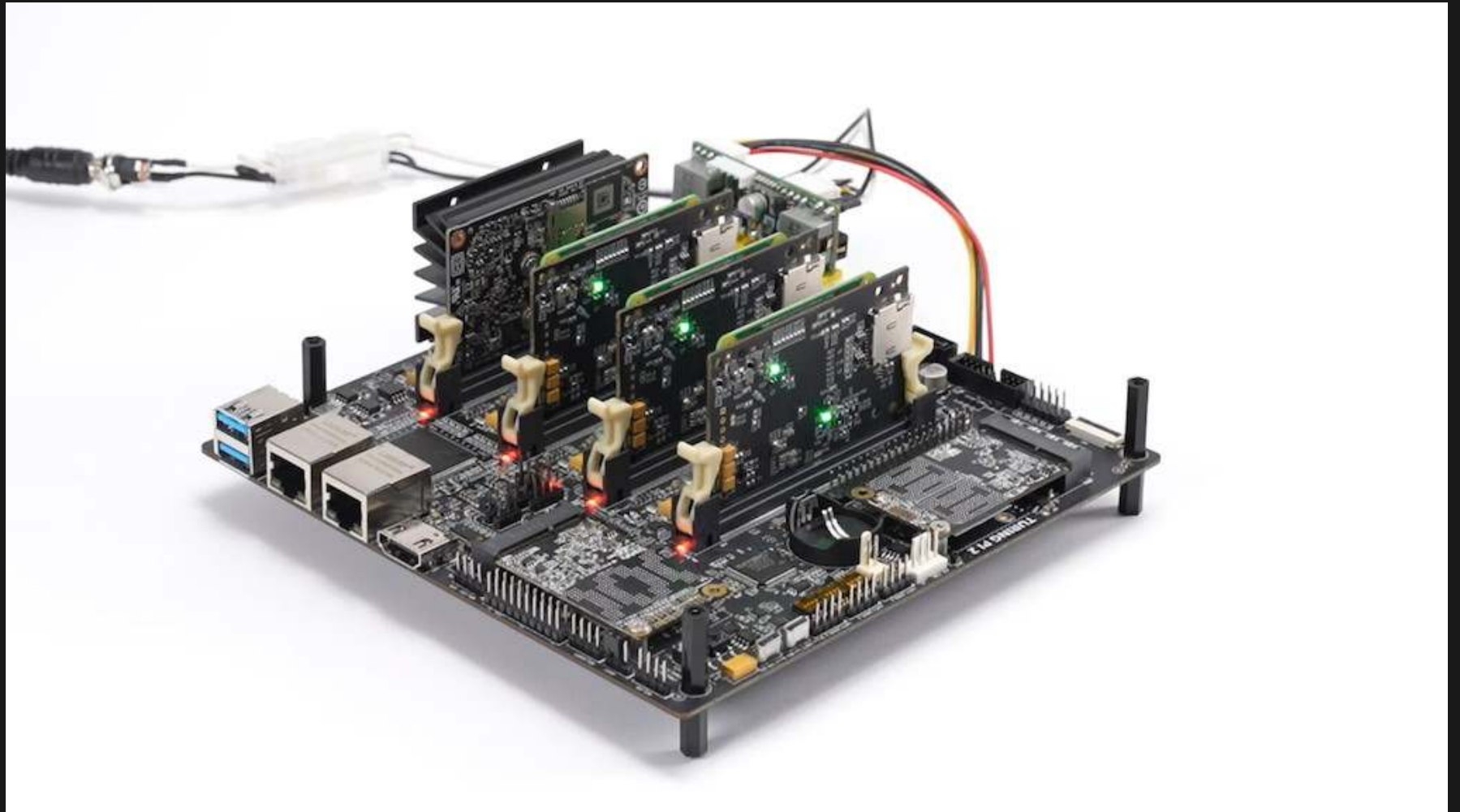






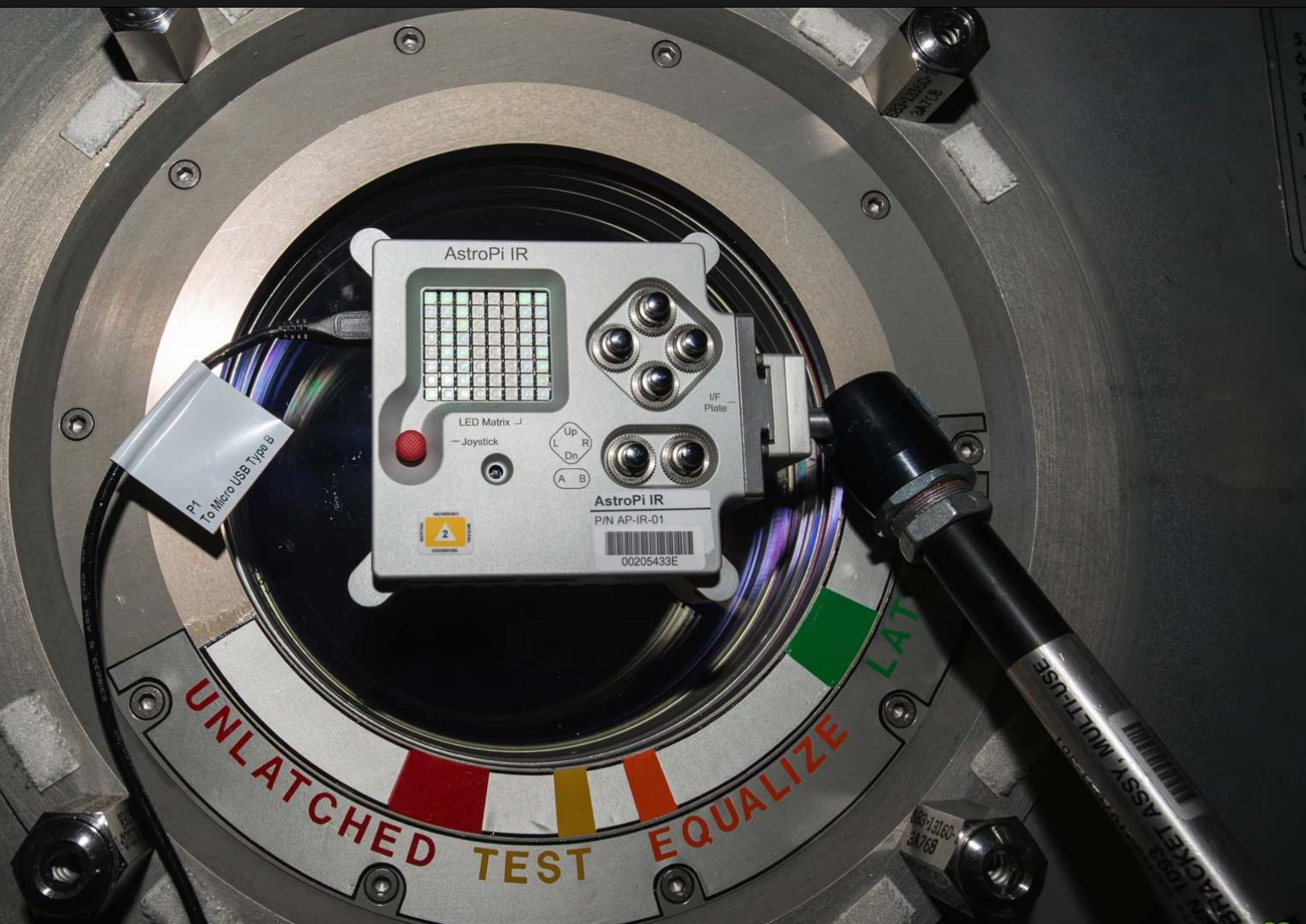


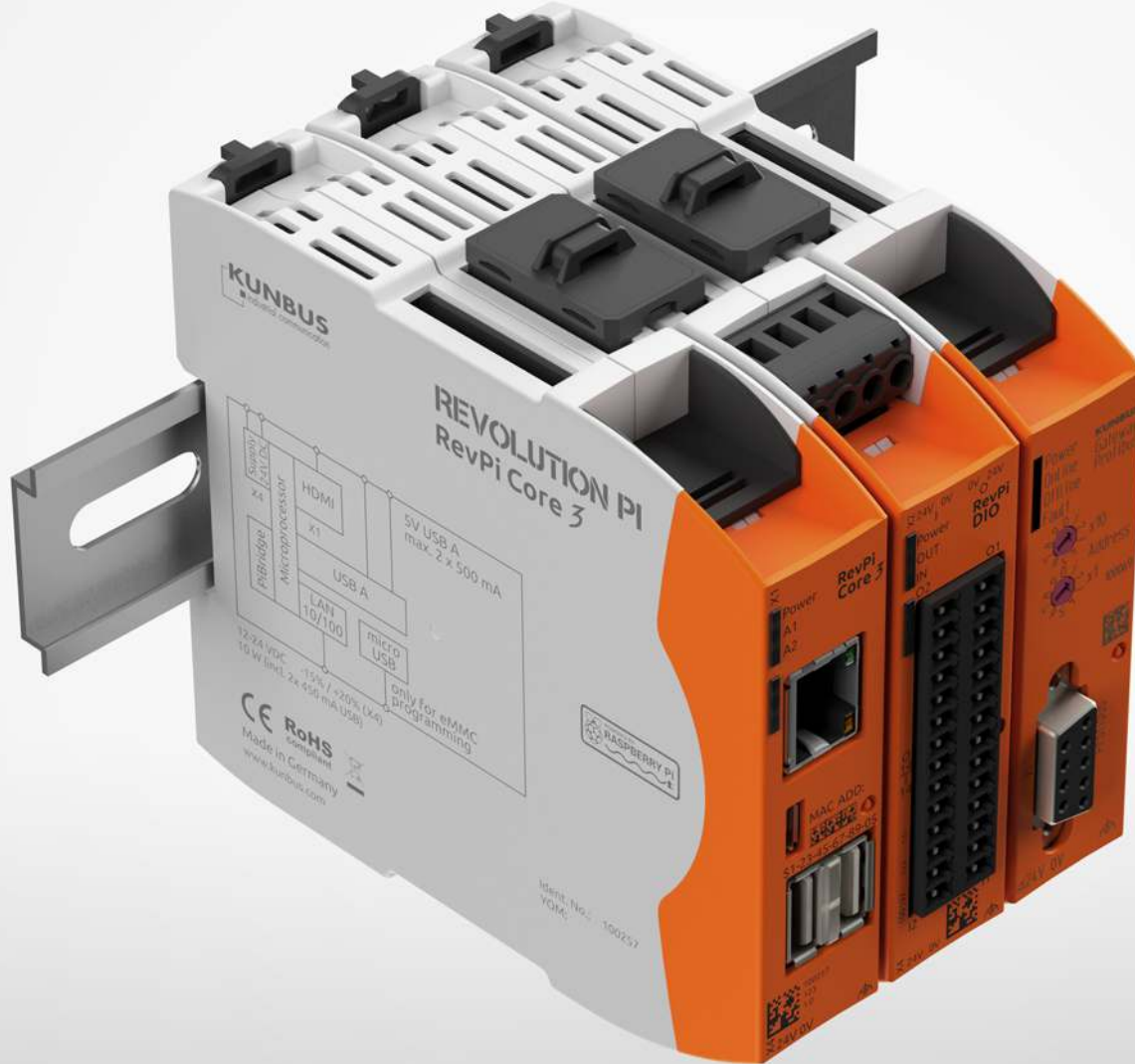














29.02.2012 - LAUNCH

10.000 Einheiten verfügbar



> 100.000 Vorbestellungen

08.09.2016 - ESTABLISHMENT

➤ ~~100.000 Vorbestellungen~~

10 Millionen verkaufte Einheiten

31.03.2026 - CURRENT STATE

~~10 Millionen verkauft~~

BBC Micro: 1.5 Millionen

Sinclair ZX Spectrum: 5 Millionen

Raspberry Pi Family: > 75 Millionen

(FY 2025 /Raspberry Pi Holdings plc)

EINFÜHRUNG GESCHICHTE



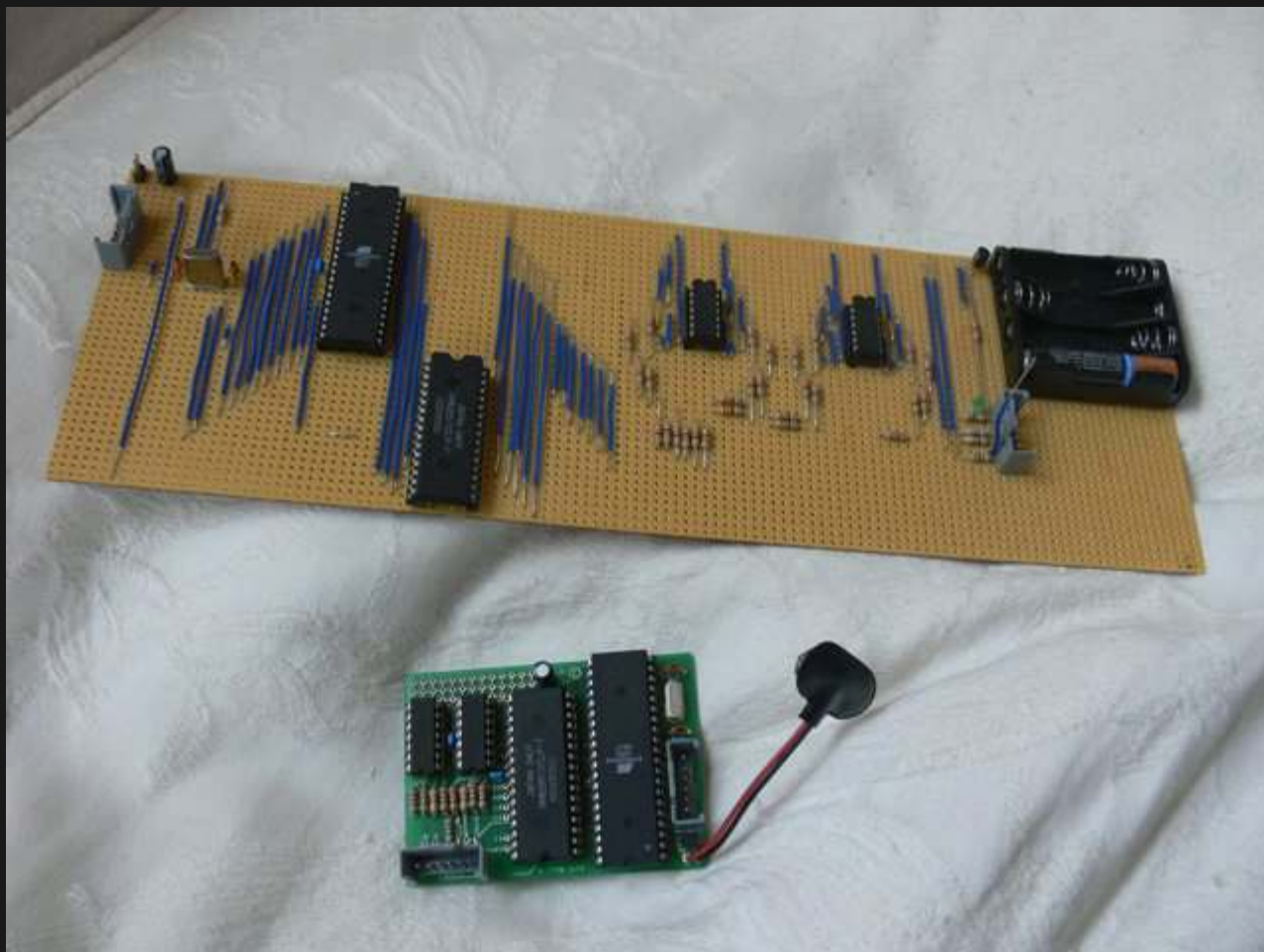
HOW DOES COMPUTER
PROGRAMMING WORK?

MAGIC.



金
亨
漫



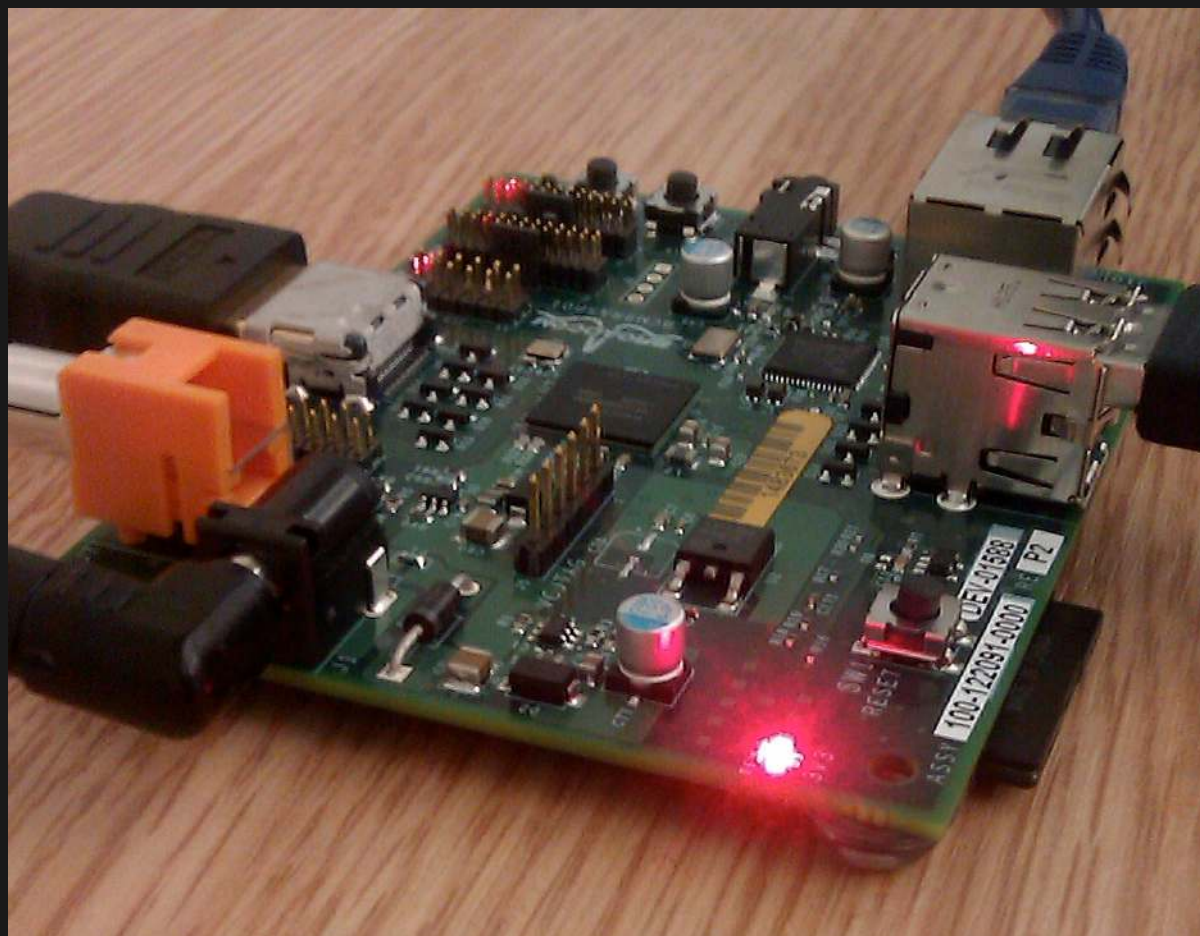


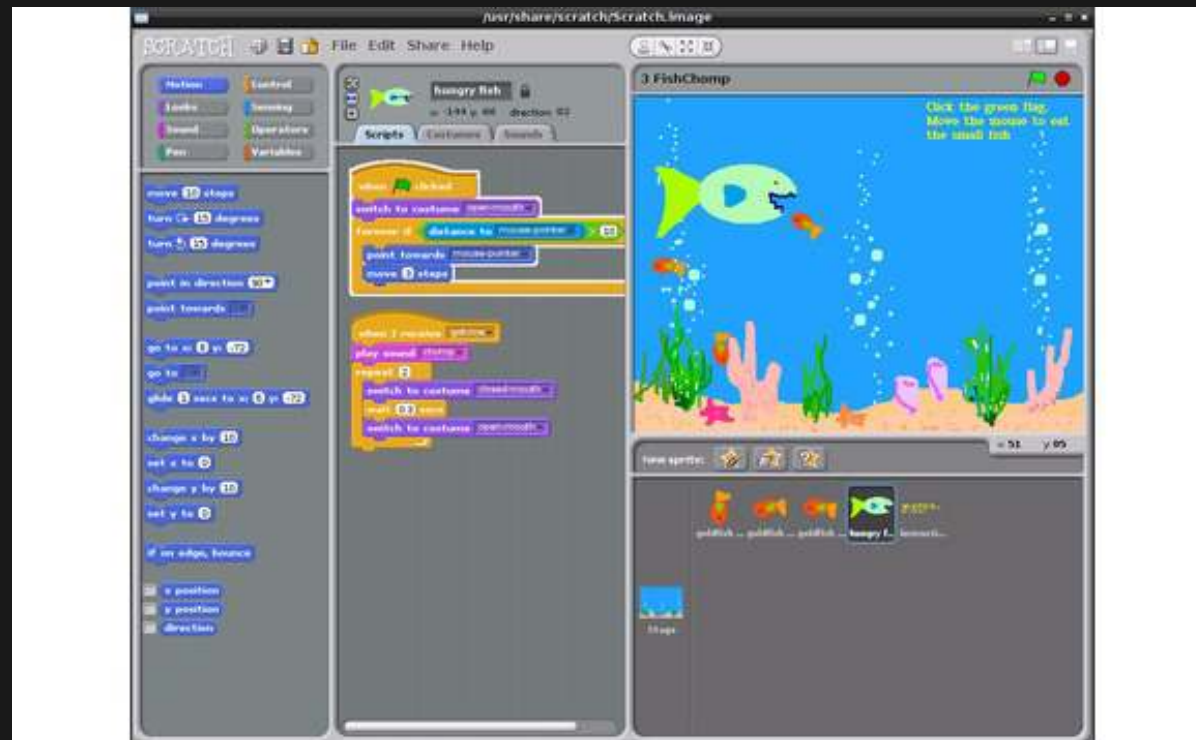
Welcome to ROBCO Industries (TM) Termlink
Password Required

Attempts Remaining: ■■■■

0x3700	:<:):*#={:#	0x37C0	)+SIZE*='^#<
0x370C	/-^}%]0!{,?!	0x37CC	# %%HUNT#]"}
0x3710	>}}:=#).=/?<	0x37D8	./_){} PART
0x3724	/-){#"}!#5+)	0x37E4	'>ROLL! : :'
0x3730	])^%-&S-=S	0x37F0	@BORN"@ ' \\
0x373C	ORT#-@^<#%/)	0x37FC	;*^,\$ [S@<%.
0x3748	*}%/_SOME*	0x3808	< {<=> } ='
0x3754	\\^\\}>+{!^#5	0x3814	=]BURN+>/'[;
0x3760	/'+TIME.--}	0x3820	,<{,\+;}\$>:/
0x376C	-=CORE]'^!>\$	0x382C	SETS-;==]GUR
0x3778	* <,)[[[-\@	0x3838	U?=[\${#,'^<
0x3784	>{[']=.#/*{:	0x3844	%^?)"?'?\$\$'\$
0x3790	'-->^NONE#+}	0x3850	]#:/'+,+ {[_'
0x379C	?!~!?'_{})?\]	0x385C	=WIRE?"","{\${'
0x37A8	%_=_-!\\:=%,	0x3868	}'_\^"+}^"}^.
0x37B4	:]<=<}:;.\\$%%	0x3874	='%]_/:;^},@ >{+-#>)■









RASPBERRY PI MODEL B, 2012



RASPBERRY PI MODELL B V2

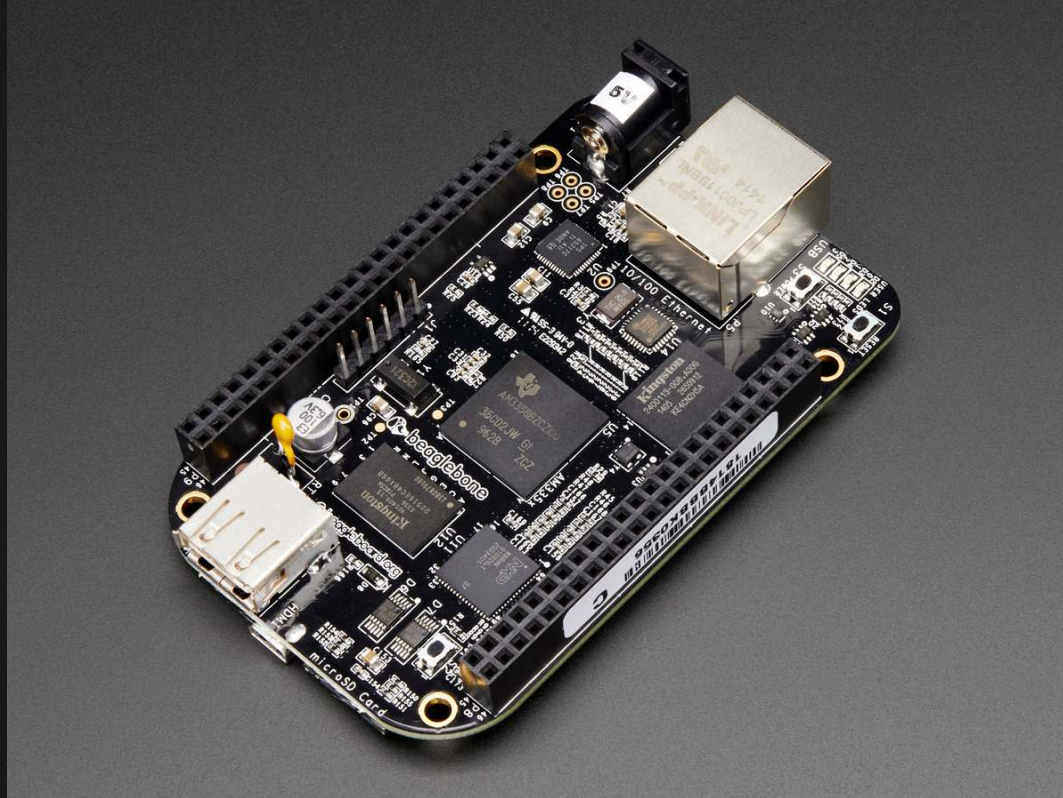
- 700 MHz ARM
- 512 MB RAM
- Full HDMI
- Cinch Video
- Stereo Audio
- USB 2.0
- 100 Mbit Ethernet
- 35 USD

EINFÜHRUNG
NUR DER RPI?

WARS DAS SCHON ;)?

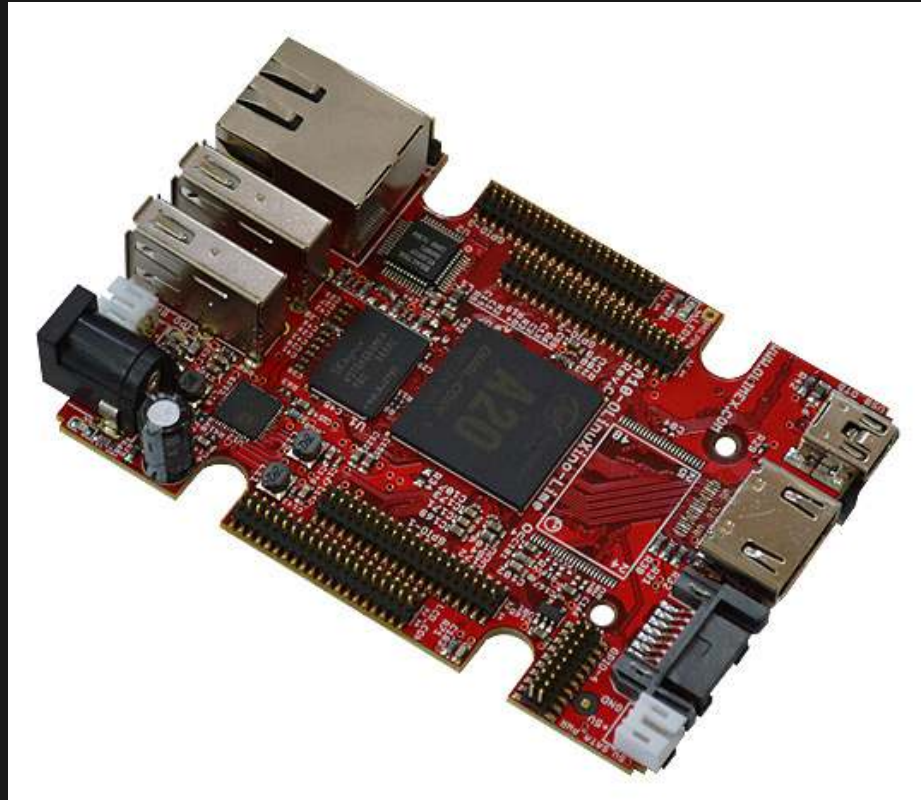
NEIN :)!

BEAGLEBONE BLACK



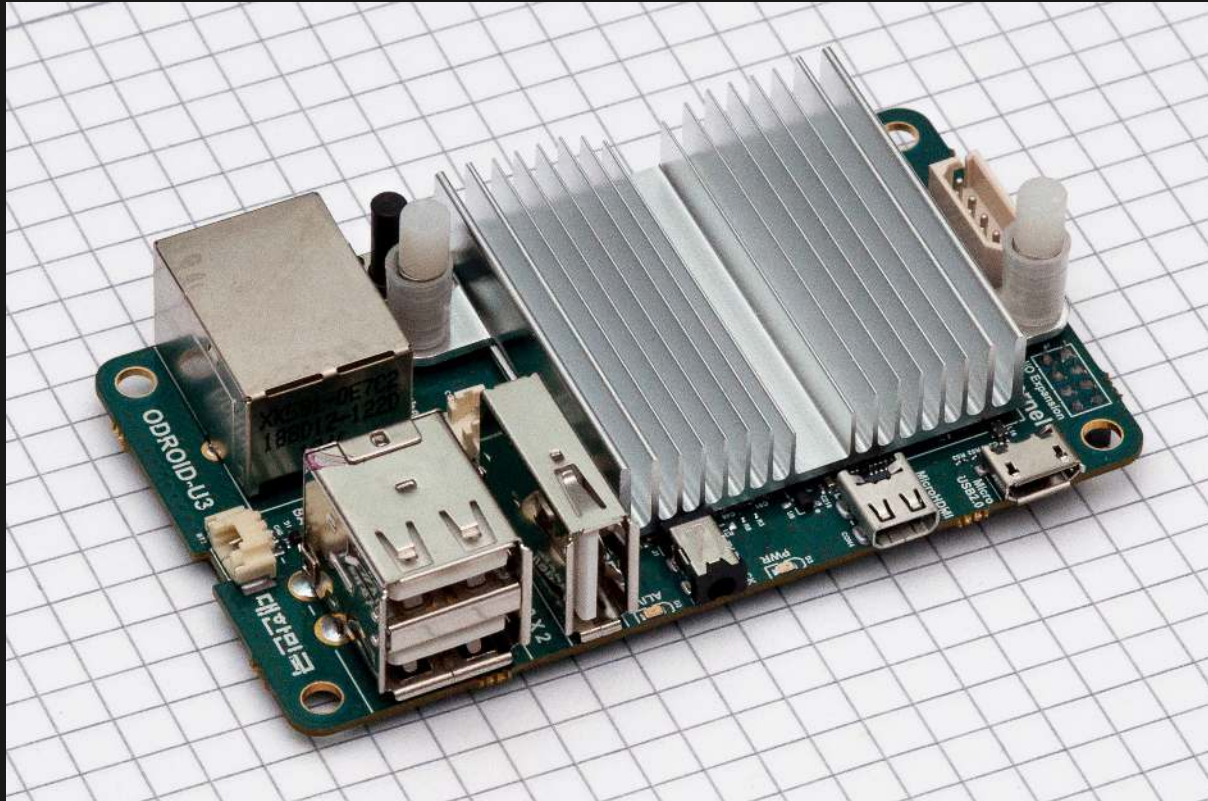
1 GHz, 512 MB RAM, 2 PRUs

OLIMEX (Z.B. A20 OLINUXINO-LIME)



1 GHz Dualcore, 512 MB RAM, 160 GPIOs + SATA

HARDKERNEL ODROID (Z.B. U3)



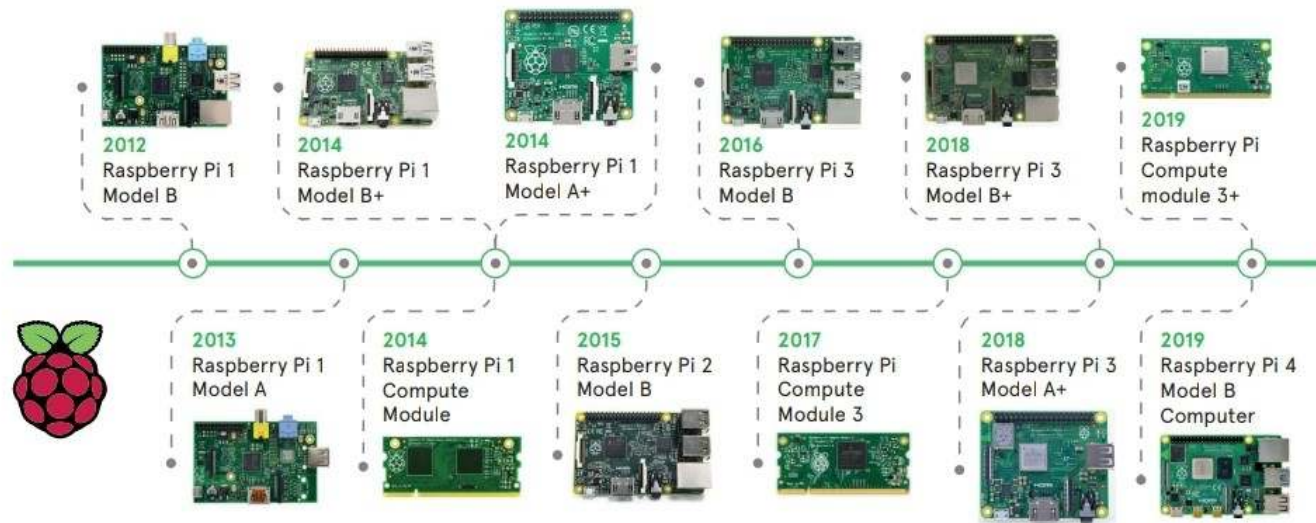
1.7 GHz Quadcore, 2 GB RAM, eMMC

KONKURENZ BELEBT DAS GESCHÄFT!

EINFÜHRUNG

WOHER DER ERFOLG?

Raspberry Pi - The Historical Journey



element14

element14
AN AVNET COMMUNITY

Newark
AN AVNET COMPANY

Farnell
AN AVNET COMPANY

RASPBERRY PI MODEL B, 2012



35 USD

1.) PREIS

Für 35 USD - ein “vollwertiger Rechner”*?

* Zubehör erforderlich...

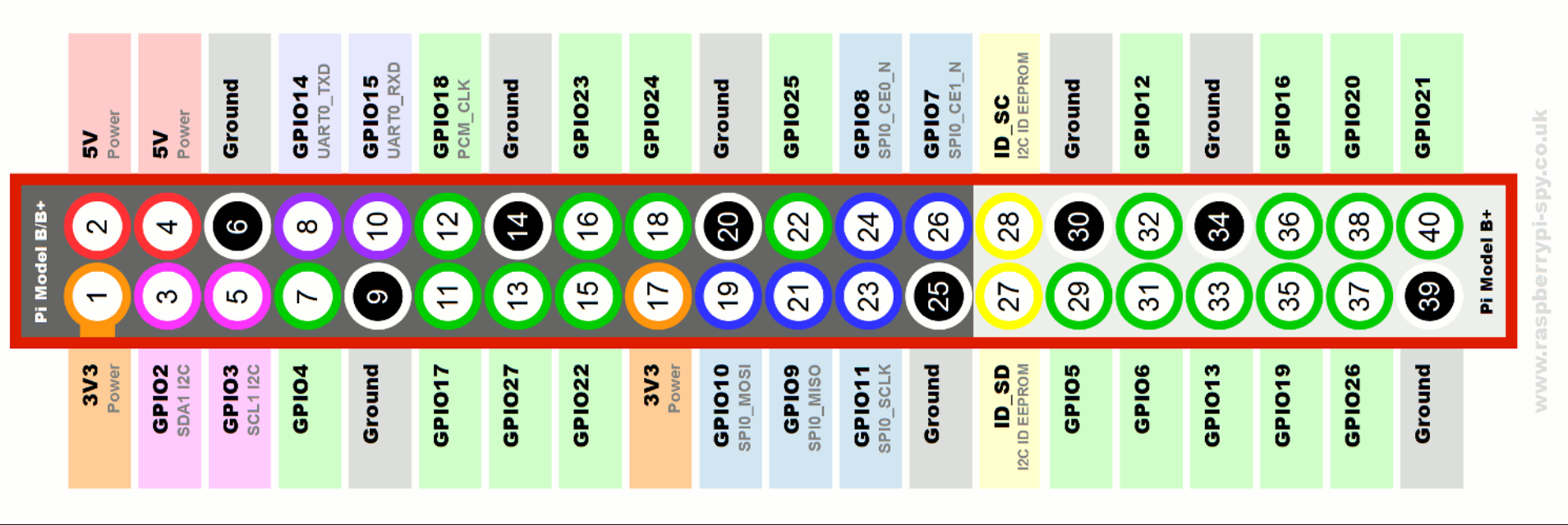
2.) GPIO



Raspberry Pi GPIO connector (P1) pinout



• = changed since board revision 2

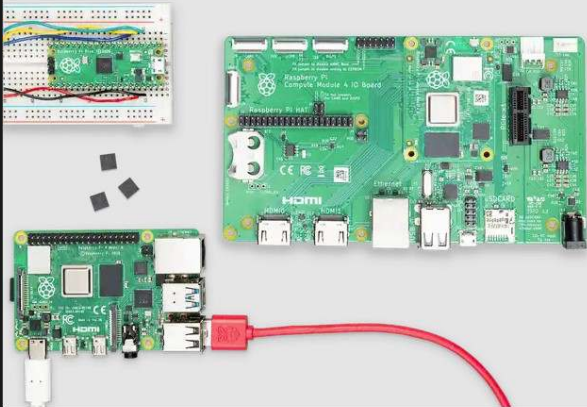


3.) COMMUNITY & DOKUMENTATION

 **Raspberry Pi**

[For home](#) [For industry](#)

[Hardware](#) [Software](#) [Documentation](#) [News](#) [Forums](#) [Foundation](#)



Computing for everybody

From industries large and small, to the kitchen table tinkerer, to the classroom coder, we make computing accessible and affordable for everybody.

[Buy Raspberry Pi](#)

 **Raspberry Pi** Camera Module 3

The classic compact camera for Raspberry Pi with a 12MP sensor, autofocus and your choice of standard or wide fields of view. Available from \$25.

[Buy Camera Module 3](#)



4.) BETRIEBSSYSTEME

Raspberry Pi OS

Our recommended operating system for most users.

Compatible with:

All Raspberry Pi models

Raspberry Pi OS with desktop

Release date: February 21st 2023

System: 32-bit

Kernel version: 5.15

Debian version: 11 (bullseye)

Size: 924MB

[Show SHA256 file integrity hash:](#)

[Release notes](#)

Download

[Download torrent](#)

[Archive](#)

Raspberry Pi OS with desktop and recommended software

Release date: February 21st 2023

System: 32-bit

Kernel version: 5.15

Debian version: 11 (bullseye)

Size: 2,752MB

[Show SHA256 file integrity hash:](#)

[Release notes](#)

Download

[Download torrent](#)

[Archive](#)

Raspberry Pi OS Lite

Release date: February 21st 2023

System: 32-bit

Kernel version: 5.15

Debian version: 11 (bullseye)

Size: 362MB

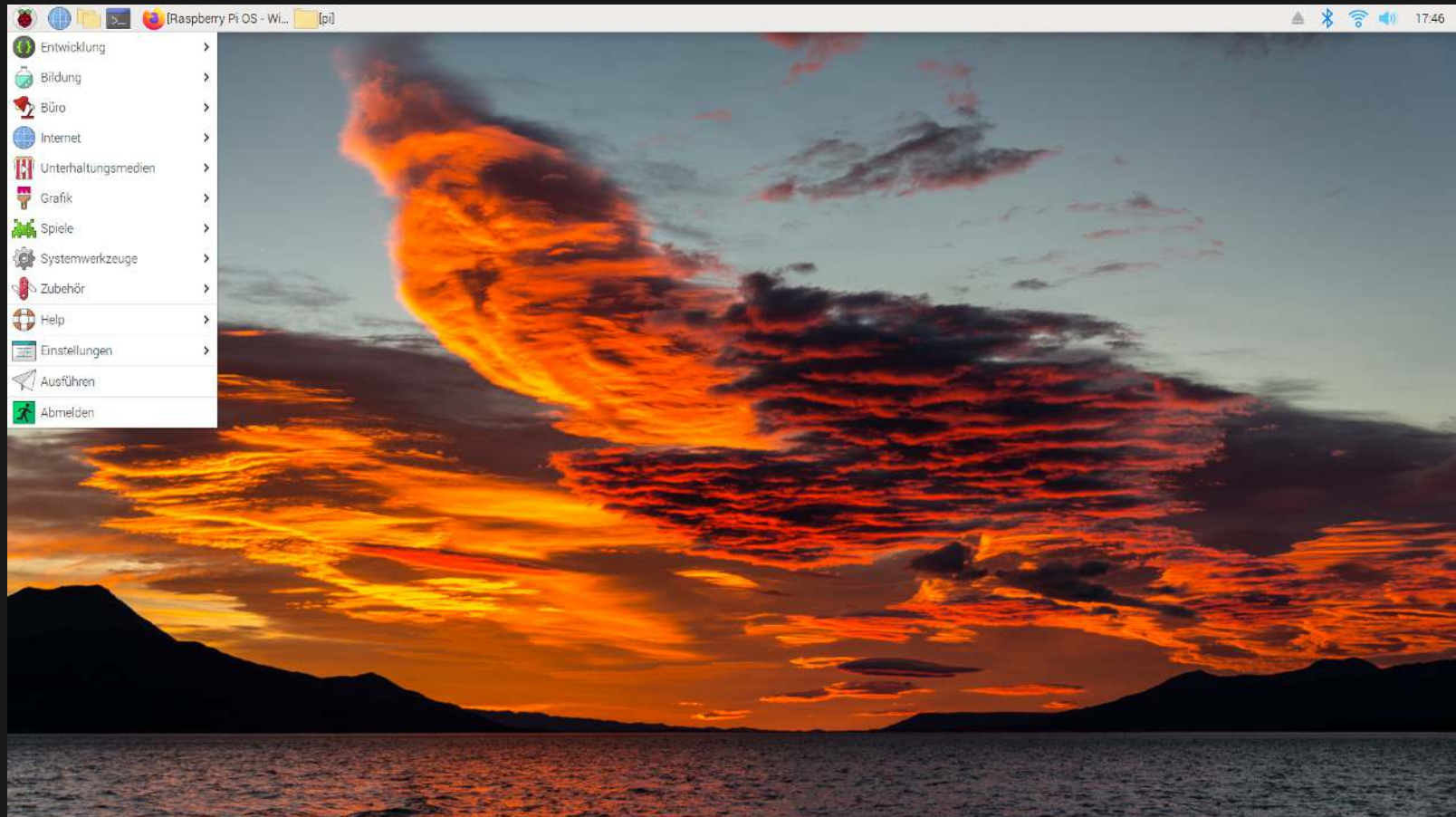
[Show SHA256 file integrity hash:](#)

[Release notes](#)

Download

[Download torrent](#)

[Archive](#)





Ubuntu

Choose from Ubuntu Desktop, Server, and Core images



Alpine Linux

A security-oriented, lightweight Linux distribution based on musl libc and busybox



Bass OS

A new take on Android for the Raspberry Pi, bringing the dynamic nature of Bass OS/Bliss OS to the ARM platform using Bass Toolkit to compile one source with multiple variants



Armbian OS

Linux for single board computers



DietPi

Highly optimised minimal Debian OS



LibreELEC

A Kodi Entertainment Center distribution



Volumio

The Audiophile Music Player and Streamer



moOde audio player

Audiophile music streamer for the Raspberry Pi



piCorePlayer

A complete audio system for the Raspberry Pi



Recalbox

The retro-gaming OS supporting 100+ gaming systems!



SatNOGS

Open-source global network of ground stations for receiving and sharing satellite data.



RaspAP

The easiest, full-featured wireless router setup for Debian-based devices.



Home automation

Home automation operating systems



eBlockerOS

Regain your online-privacy & block all ads: in browsers, in apps, in videos.



Web3 Pi

Web3 Pi is an open-source project that enables users to easily set up a Full Ethereum Node using Raspberry Pi, offering automated configuration and monitoring capabilities.



Digital signage and kiosks

Digital signage and kiosk operating systems



Kali Linux

Kali Linux is an open-source, Debian-based Linux distribution geared towards various information security tasks, such as Penetration Testing, Security Research, Computer Forensics and Reverse Engineering.

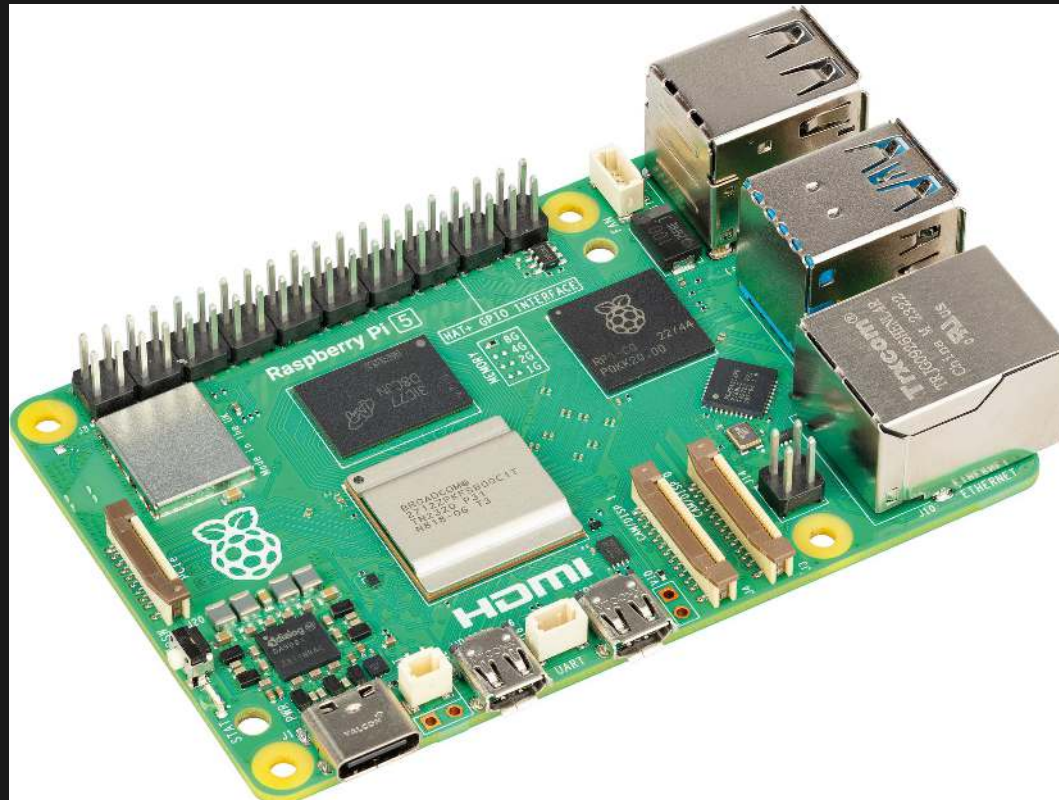


Clea OS

Clea OS is the flexible, reliable, and secure Operating System

5.) EIN RPI FÜR JEDEN VERWENDUNGSZWECK

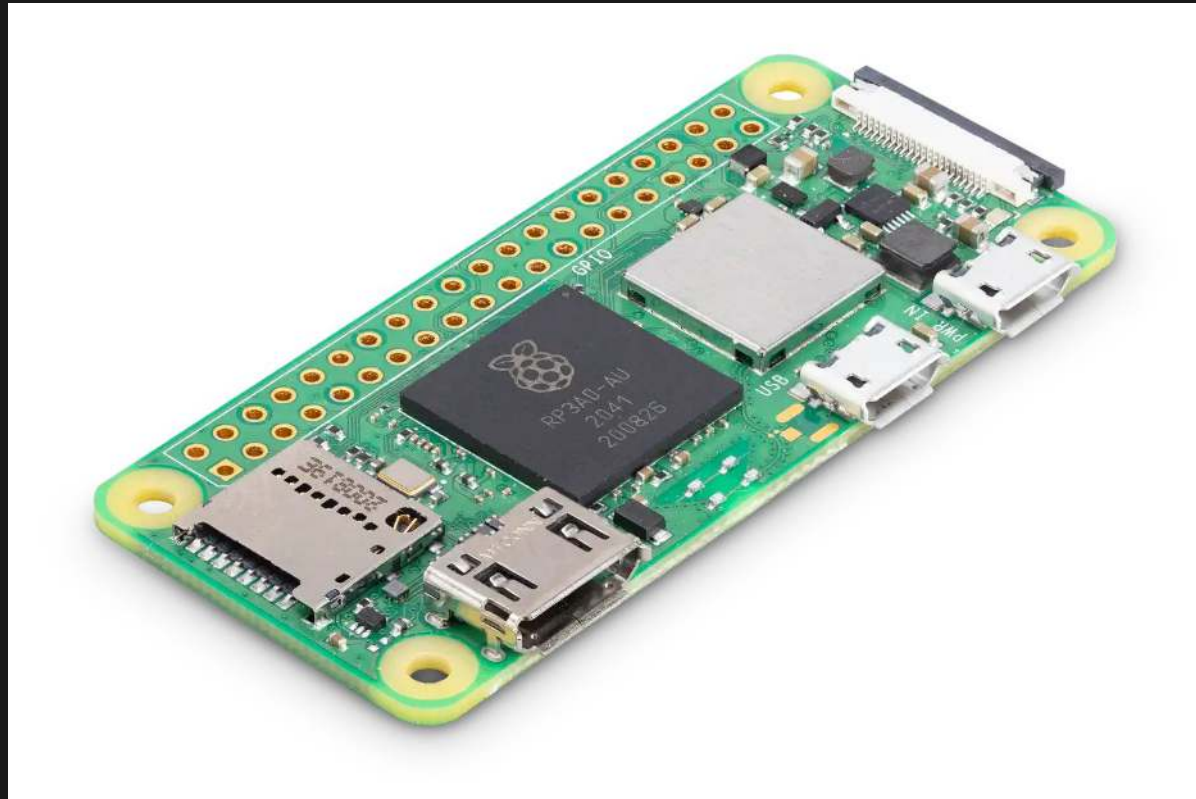
RPI 5



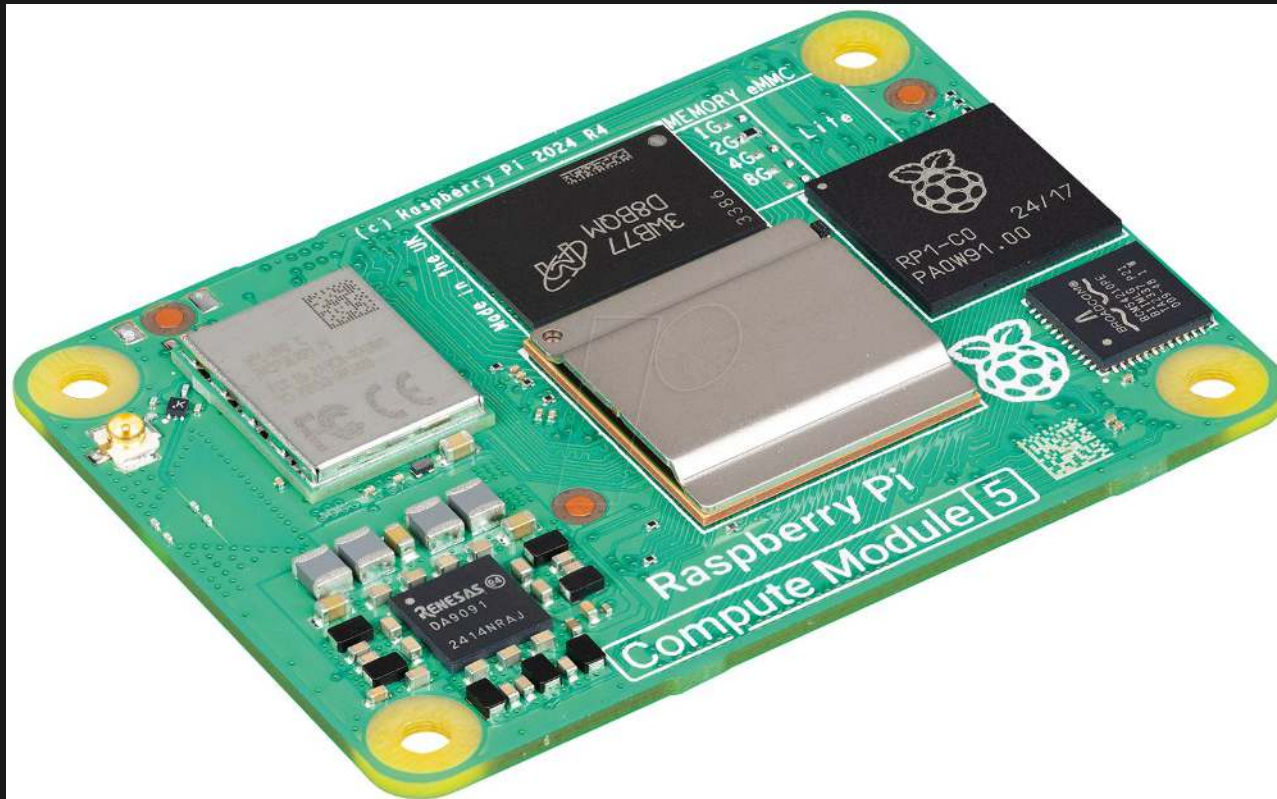
RPI 500



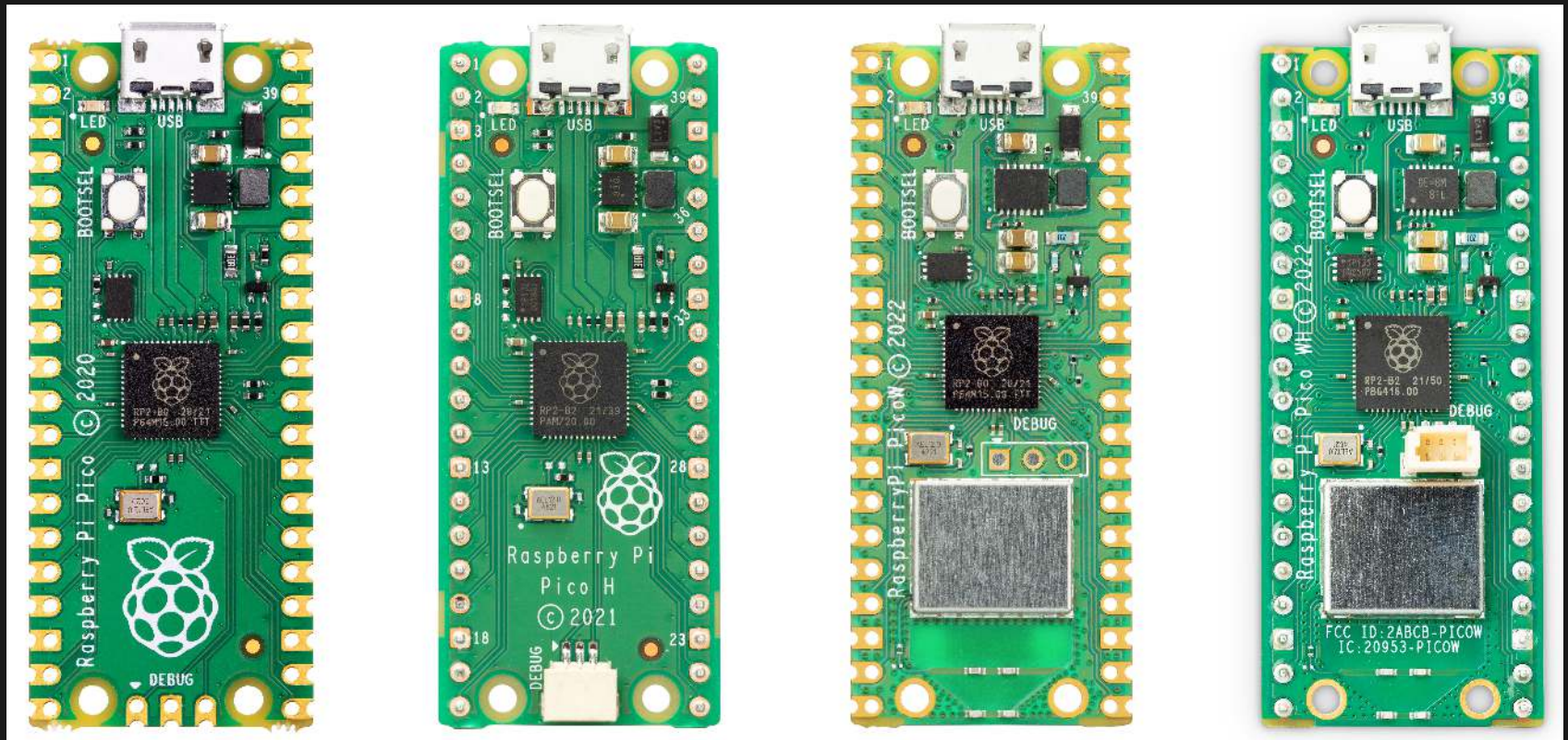
RPI ZERO 2 W



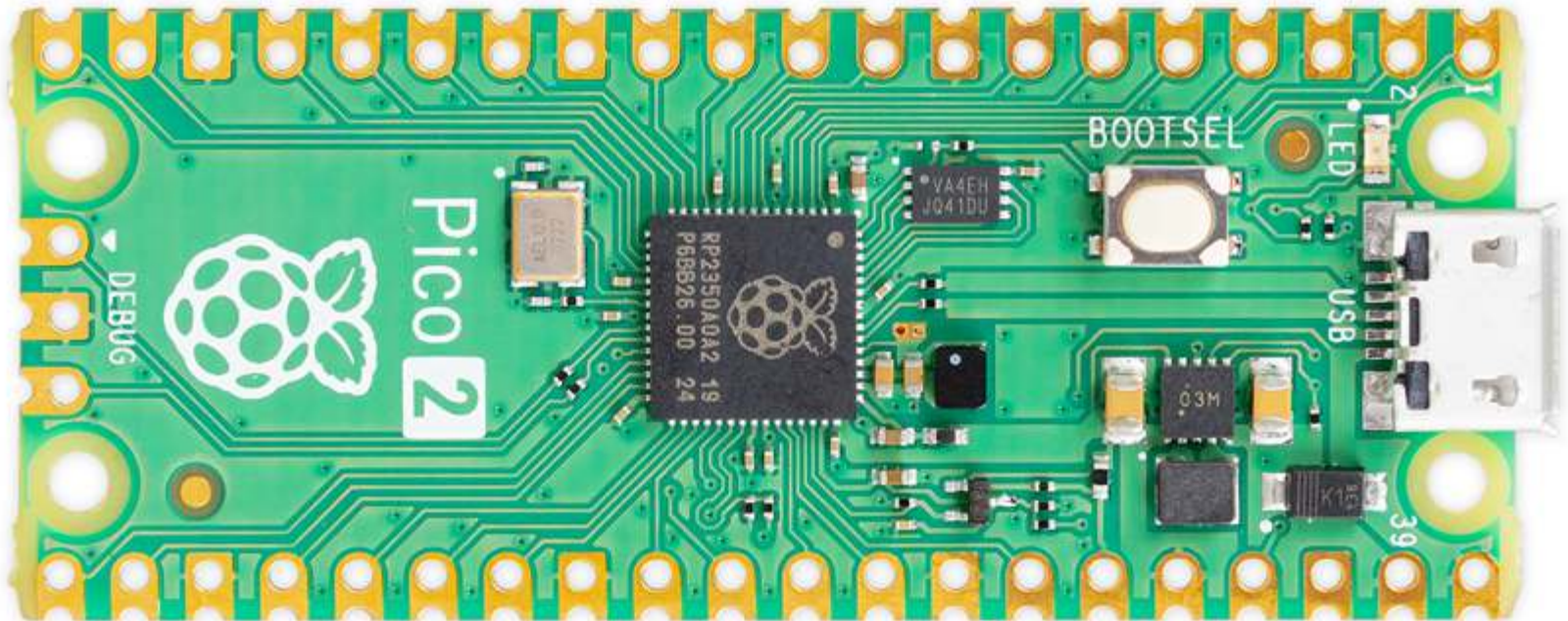
RPI COMPUTE MODULE 5

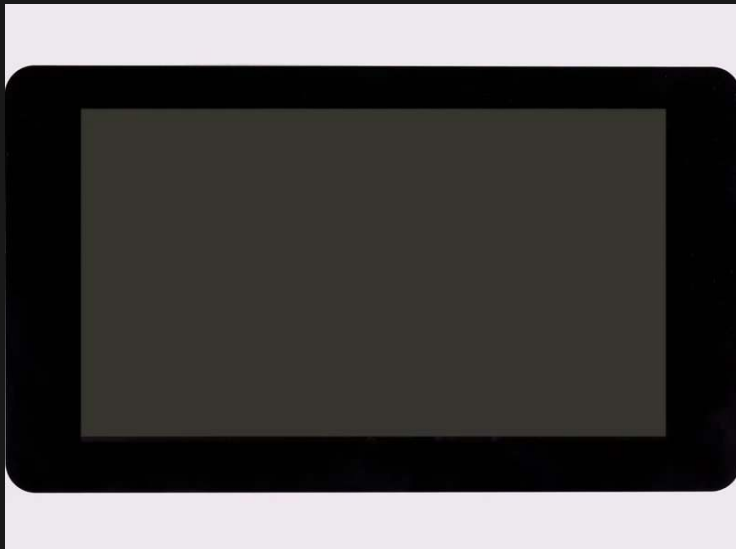
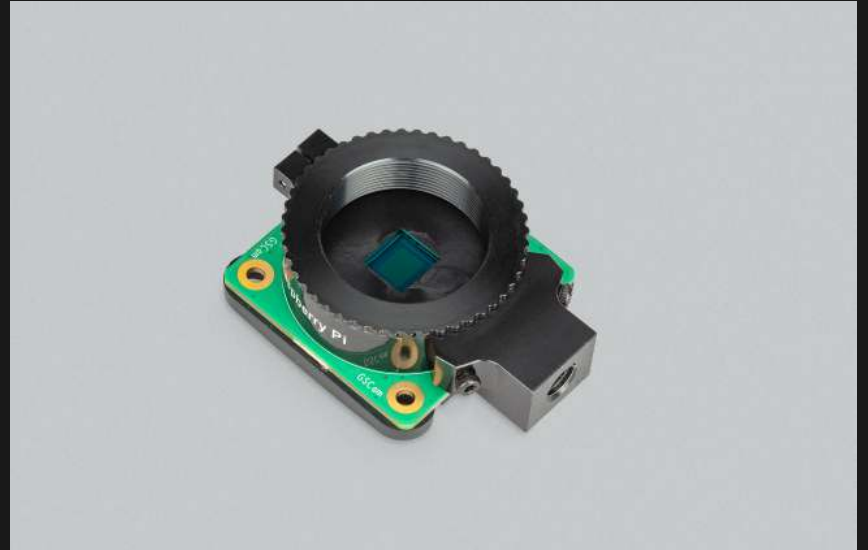
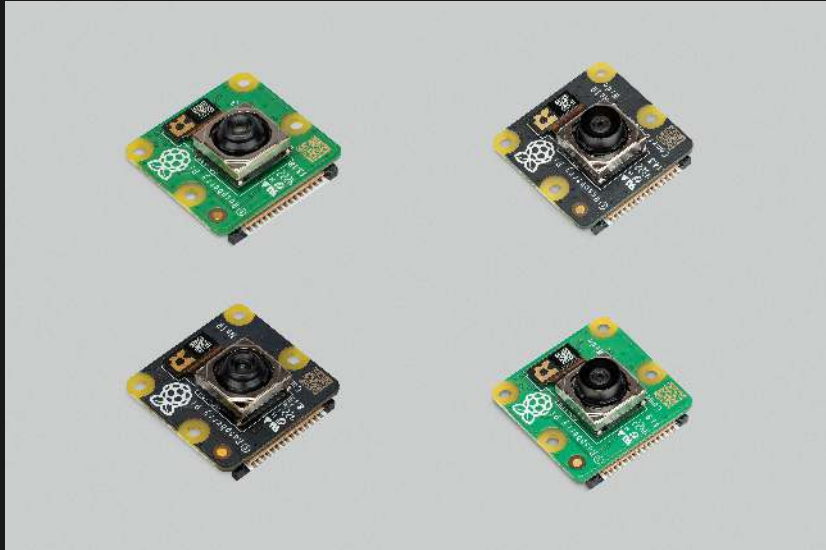


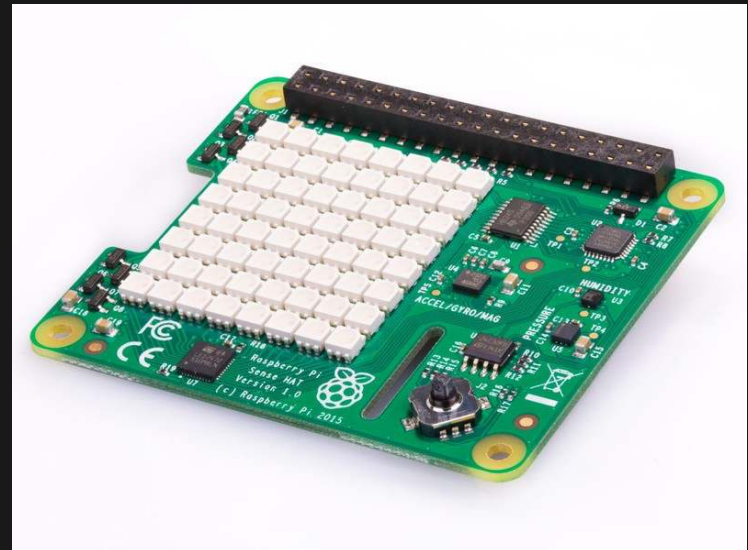
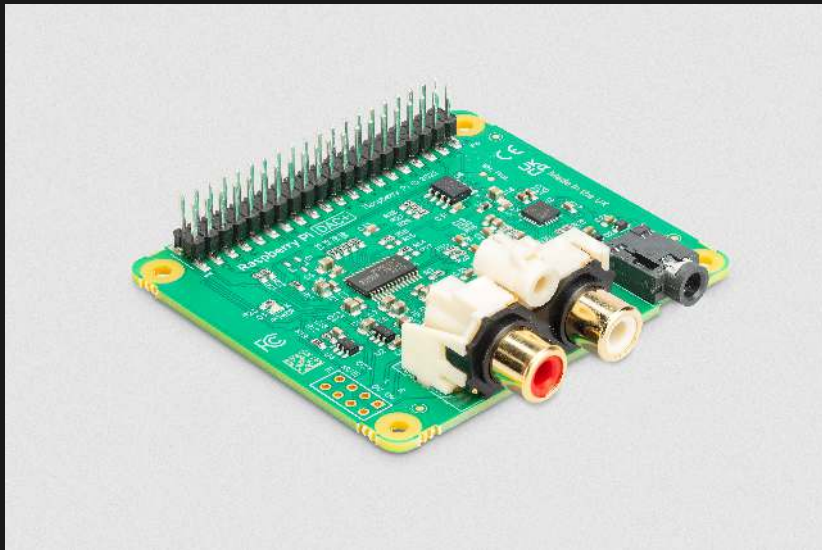
RP2040: RPI PICO (H) / RPI PICO W(H)



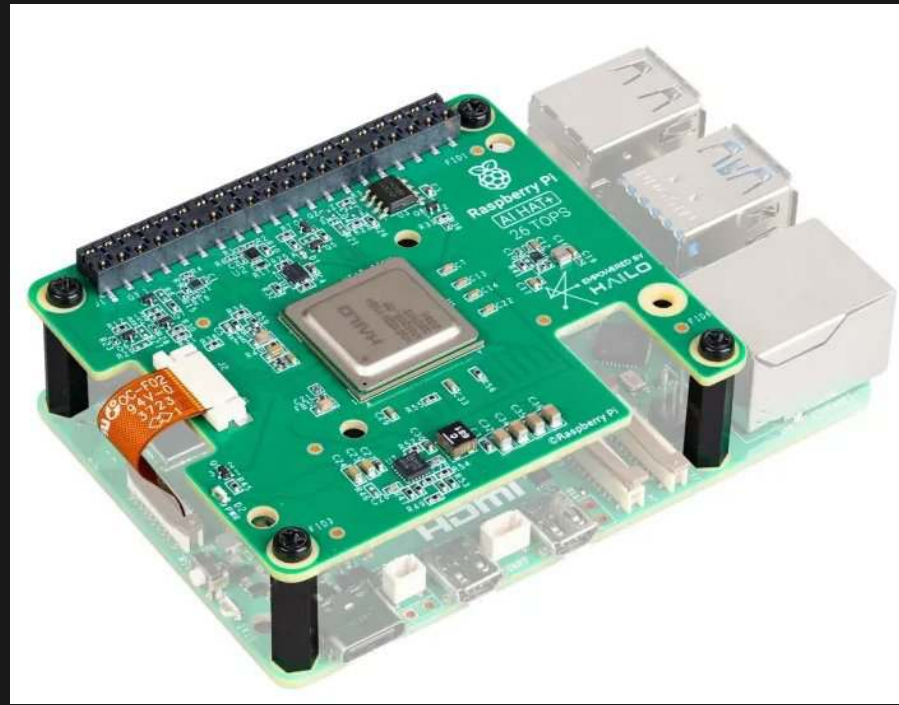
RP2350: RPI PICO 2





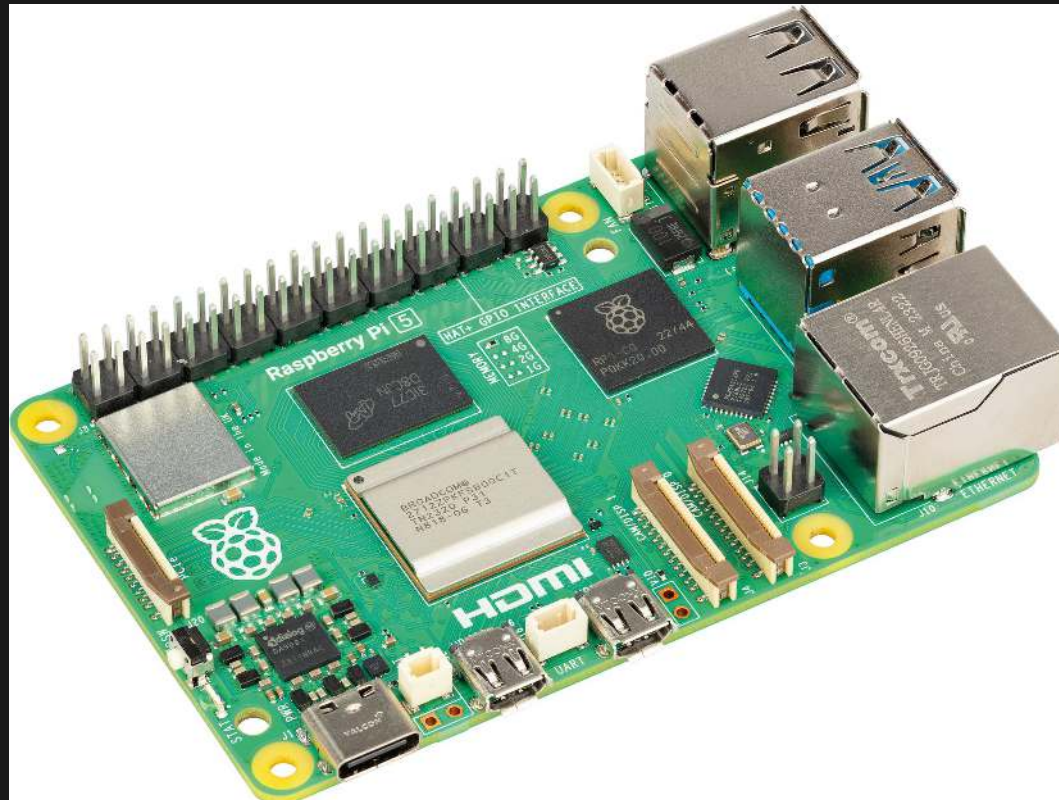






ERSTE SCHRITTE

RASPBERRY PI 5



RASPBERRY PI 5

- 2.4 GHz ARM Quadcore (64 bit)
- 1*, 2, 4, 8 oder 16 GB RAM (*erst seit Ende 2025)
- 2x Micro HDMI
- 2x USB 3.0 / 2x USB 2.0
- Gigabit Ethernet (mit PoE Support)
- Bluetooth 5.0 / BLE
- WLAN (802.11.b/g/n/ac)
- PCIe 2.0 x 1 Interface
- ~ 46,90€ (1 GB Version) *

(* mehr später...)

ZUBEHÖR: MICRO SD CARD

$\geq$ 32 GB, Markenhersteller, Class A2



ZUBEHÖR: USB-C NETZTEIL

5.1V, ≥ 5 A



ZUBEHÖR: GEHÄUSE



ZUBEHÖR: ÜBERSICHT



INSTALLATION

- Raspberry Pi Imager installieren:
<https://www.raspberrypi.org/software/>
- Micro SD Karte in den PC stecken & Imager starten
- “Raspberry Pi 5” wählen
- “Raspberry Pi OS (64-bit)” als OS wählen
- SD-Karte auswählen
- Benutzer, Passwörter, etc. vorkonfigurieren
- “Schreiben” klicken
- Sobald fertig, Micro SD entnehmen, in RPi einlegen
- Alle Stecker verbinden und mit Strom versorgen

RASPBERRY PI IN 2026

IST ERS NOCH WERT?

CONTRA: PREIS / NUTZEN

Folgen der AI Blase

 Raspberry Pi Produktnummer: RPI5-16GB Raspberry Pi Raspberry Pi 5, 16GB RAM ★★★★★ 5.0 (3 Bewertungen) 319,20 € Preise inkl. MwSt. zzgl. Versandkosten ✗ Artikel aktuell nicht lieferbar	 Raspberry Pi Produktnummer: RPI5-4GB Raspberry Pi Raspberry Pi 5, 4GB RAM 118,50 € Preise inkl. MwSt. zzgl. Versandkosten ✗ Artikel aktuell nicht lieferbar	 Raspberry Pi Produktnummer: RPI5-1GB Raspberry Pi Raspberry Pi 5, 1GB RAM 46,90 € Preise inkl. MwSt. zzgl. Versandkosten ✓ Sofort verfügbar · 100+ Stück · 1-3 Tage ✓ Bestellung innerhalb 17 Std. und 21 Min. für morgigen Versand
--	---	---

+ SD Karte, RPi 5 Netzteil, Gehäuse mit Kühler, ...

Preise je nach Einsatzzweck aktuell nicht zu rechtfertigen

CONTRA: ANDERE HOLEN AUF

Plattformen auf Basis von Rockchip 3588 oder Qualcomm teilweise um Faktor 2+ schneller (mit integrierter NPU, real verwendbarer GPU und mehr Features)

CONTRA: BROADCOM

- RPi ~ Broadcom
 - aber: z.B. Arduino = Qualcomm
- Eigener Kernel, nicht integriert in Mainline
 - aber: mit baldiger Ausnahme von Rockchip 3588
leider “Standard”
- Closed source binary blobs
 - siehe oben

PRO: COMMUNITY, DOKUMENTATION, SUPPORT, ZUVERLÄSSIGKEIT

Weiterhin führend und Raspberry Pi ist quasi das
Synonymn für Single Board Computers aller Art
geworden.

Besonders bemerkenswert: Der Support für Industrie
Kunden

BEWERTUNG

Wie immer: Einsatzzweck beachten und abschätzen.

Als Lernplattform und zum Start in die SBC Welt ist der Raspberry Pi weiterhin durch nichts ernsthaft zu ersetzen.

AKTUELLE (VOR)WARNUNGEN

KERNEL 7.4/7.5

Linux will mit Kernel 7.4 oder 7.5 den Support für ARM 32 bit Systeme entfernen, d.h. alte RPi 1, RPi Zero/Zero W und RPi 2 (v.1.1) werden keine neuen Kernel Updates mehr erhalten.

RPI 5 RAM

RPi Foundation ändert aktuell die Firmware um RAM fest mit dem RPi 5 zu verheiraten (keine nachträgliche Änderung/Austausch von RAM Modulen möglich) -> Unterbindung von Schwarzmarkt (original RPi 5 mit minderwertigen RAM Modulen).

MEHR RPI?
GUTE QUELLEN

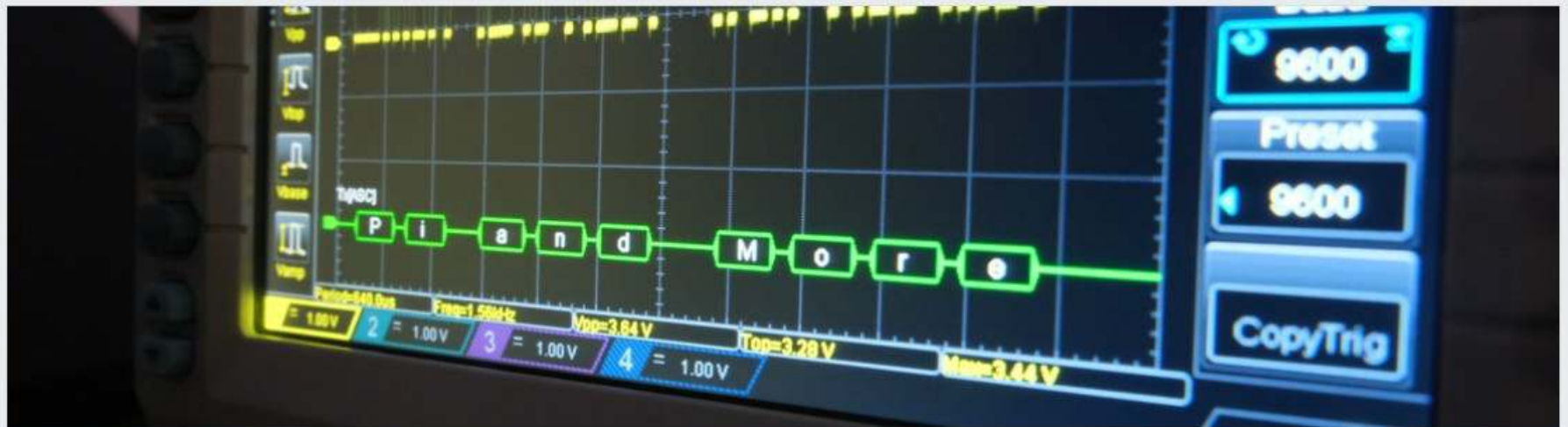
INTERNET

- Allgemein: <https://www.raspberrypi.com>
- Dokumentation:
<https://www.raspberrypi.com/documentation/>
- Forum: <https://www.raspberrypi.com/forums/>

BÜCHER & KITS

- Raspberry Pi Foundation
- elektor
- Rheinwerk
- Franzis
- Conrad
- ...

RASPBERRY PI JAMS



Pi and More 14

Hochschule Trier, 26. September 2026

[Weitere Informationen](#)

[Jetzt registrieren \(kostenlos!\)](#)

[Reiche deinen Beitrag ein](#)

[Helfer werden](#)

<https://piandmore.de/>

FRAGEN?

Danke für Ihre Aufmerksamkeit -
und viel Spaß auf der Pi And More 14 :)!

www.nico-maas.de