KHADAS TECHNOLOGY

Amazing Khadas, Always Amazes You!

Khadas

KHADAS BRAND

Khadas brand is owned by Khadas Technology Co., Ltd and caters to the global market for high-tech trendy products. Our products are sold worldwide to both individuals and businesses.

Our brand covers single board computers, high-end audio products, consumer computing equipment, and specialised solutions for industry and big business. More products will be added soon.

Khadas products have even been used by industry titans. For example, the Khadas VIM3 has been used by the Google Fuchsia team to develop products for the artificial intelligence market.

Khadas always aims to revolutionise the industry. Our latest product the Khadas Tone2 Pro uses a new patented technology called Balanced RCA, redefining the RCA connector to a 3-pin standard.

In 2023, Khadas will release 'Mind'. Mind will be a next-gen poly-PC designed to flow with your life. Use it as a desktop, an online conferencing/collaboration tool, a mobile-micro-server/database, and more!

* 'poly': "polymorphic", always morphing to suit your situation

OUR MISSION

Khadas was incorporated in 2016, and got its name from the Tibetan word "khata", a high quality silk fabric necessary for Tibetan and Mongolian social etiquette to convey respect and gratitude.

Khadas is a mission to create innovative products that will serve the Maker community and the world, thus was born our famous brand motto: "Amazing Khadas, Always Amazes You!".

Think different, act different, be different, and make a difference. Khadas develops superior quality, high performance trendy products for Makers, Developers, and Dreamers.

Khadas' new range of audio products is intended to inspire and impress users with high-fidelity, crystal clear sound. Music feeds the soul, and at Khadas we believe that our products should do just that.

KHADAS

"Amazing Khadas, Always Amazes You!"
Develop trendy and inspiring products that give users a feeling of "niubility"!

Niubility: "A feeling of wonder, amazement and awesomeness."

KHADAS TEAM

Khadas consists of a global team of diverse individuals from China, Singapore, Russia, Pakistan, and more. It is our shared dream and passion for building great products that brought us together. If you share our passion, make Khadas your new home. We have the following departments:

- **Research & Development**
    - Single Board Computers
    - Hi-Fi Audio Products
    - Next Generation Computer
    - Artificial Intelligence
    - Next Generation Computer
- **Sales**
    - Direct Sales
    - Platform Sales
    - After-Sales Support
- **Branding & Marketing**
    - Photography, Print & Online Graphic Design (2D)
    - Rendering, Animation & Modelling (3D)
    - Social Media & Community Mgmt
- **Supply Chain**
    - Manufacturing & Quality
    - Materials & Chip Sourcing
- **Financial Management**
- **Cultural Development**

"Team up for niubility!"

Company Name: Khadas Technology Co., Ltd.
Company ID: 91440300MA5G98LD1B (China)
Based-In: Shenzhen, China

KHADAS COMMUNITY COMPETITION 2021

Khadas is committed to nurturing an open source community of mutual help and sharing. It is with this spirit in mind, that we want to give back to all the participants who have contributed to our community, by organizing the first-ever "Khadas Community Competition".

The purpose of holding this competition is to first allow those who have already contributed a chance to participate and win generous prizes, and secondly to encourage more people to share their own experience and code, and make progress together with the Khadas Open Source Community.

https://www.khadas.com/post/2021-khadas-community-competition-results

Touchscreen Server Monitoring

XVIM Multifunctional Box

Guitar ML Amp/Cab Simulator

ATV Head Unit
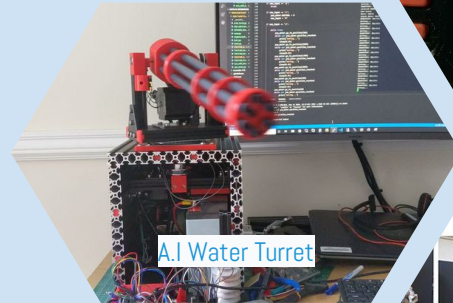
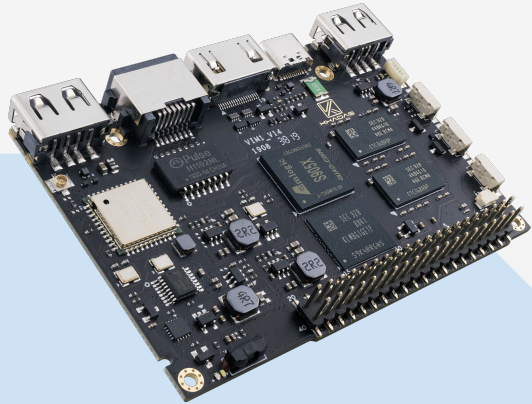A.I Water Turret
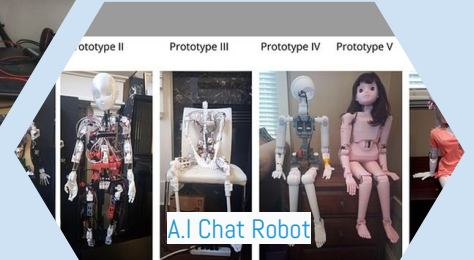
A.I Chat Robot

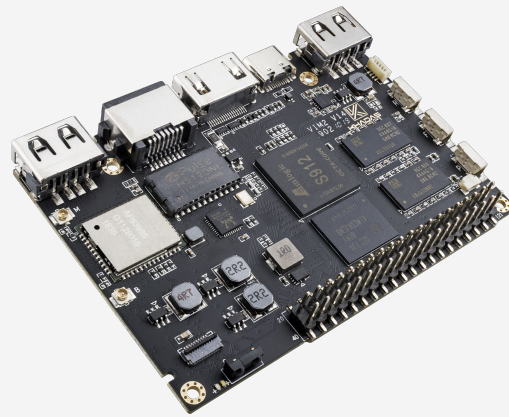# KEY EVENTS

2016

NOV
Our first Khadas branded VIM1 single board computer

2018

MAR
Khadas VIM2 was released, Google ported Fuchsia OS to the device

2018

JUN
Khadas Tone Board (Tone1) was released to the Hi-Fi Audio Market, it received rave reviews
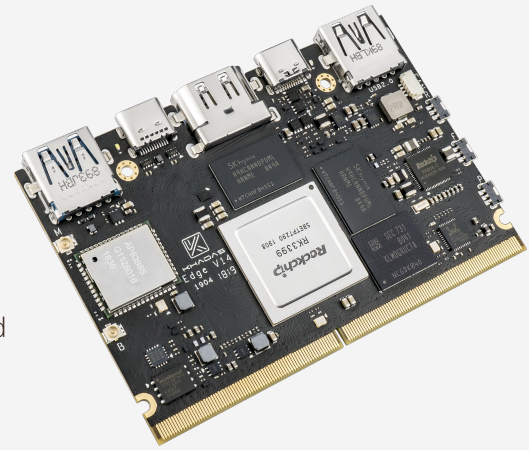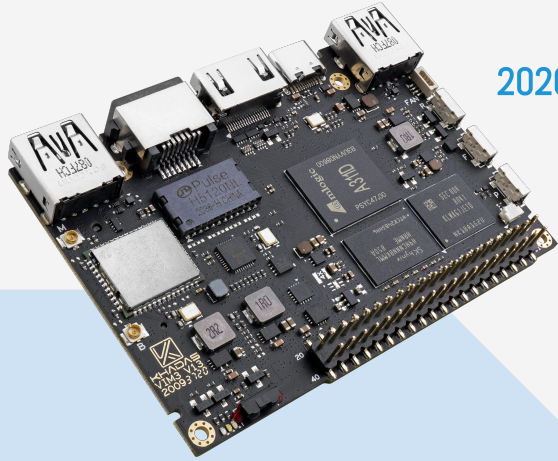
KEY EVENTS

2018 — NOV — Khadas Edge Series SBC was released with the Rockchip RK3399 SoC

2020 — NOV — Released VIM3/3L SBCs with Amlogic A311D SoC & 5.0 TOPS NPU

2020 — DEC — Tone2 Pro Hi-Fi Mini Desktop DAC w/ Balanced RCA connector (patented)
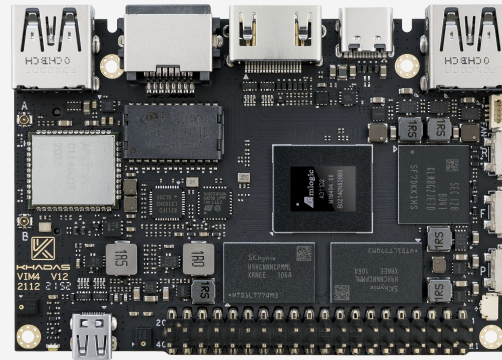
KEY EVENTS

2022

MAY
Released VIM4 A311D2
SBC with OOWOW
preinstalled

2022

FEB
Khadas Tea, world's first
MagSafe Headphone Amp

KEY EVENTS

2022

2022

2022

2022

SEP
Released 'BT Magic' USB-C Bluetooth audio receiver for Tone2/Tone2 Pro

SEP
Released Edge2 Rockchip RK3588S ARM PC with OOWOW preinstalled
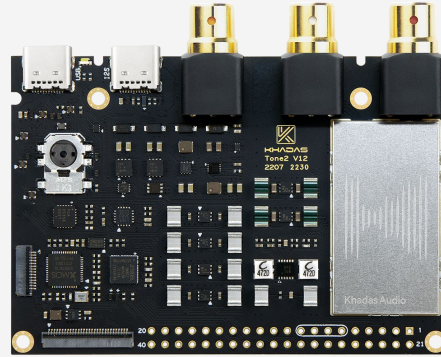
SEP
Released Tone2 & Tone2 Maker Kit for the DIY prosumer market
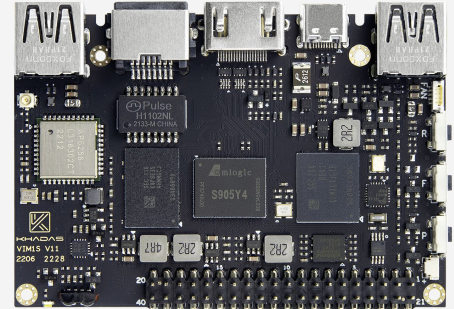
SEP
Released VIM1S S905Y4 SBC with OOWOW preinstalled for Makers and Developers

PRODUCT MATRIX

SINGLE BOARD COMPUTERS

VIM Series, Amlogic SoCs

PERSONAL COMPUTING

Mind Series

MAKER COMMUNITY

Edge Series, Rockchip SoCs
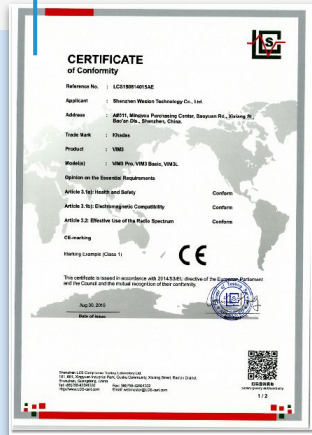
AUDIO PRODUCTS

Tone Series (Desktop), Tea (Mobile)
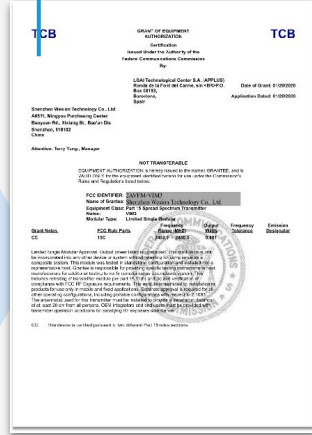
PRODUCT CERTIFICATION
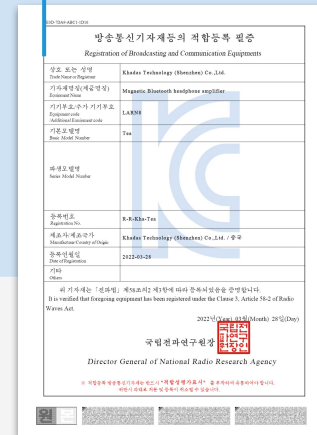
CE

LCS190814015AE

FCC

2AVFM-VIM3

TELEC

R210-140783

KC

R-R-Kha-Tea

PRODUCT CERTIFICATION

LDAC
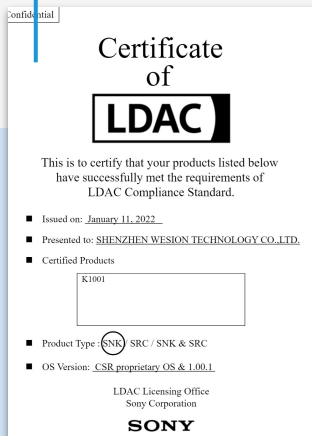
R210-140783

APTX
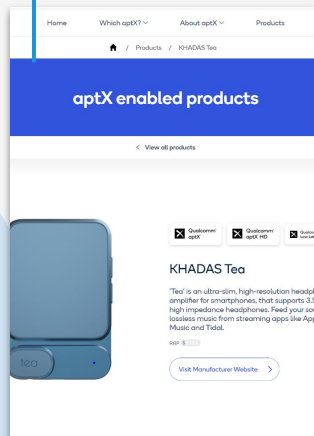
KHADAS Tea

ROHS

LCS190814016AR

APPLE MFI
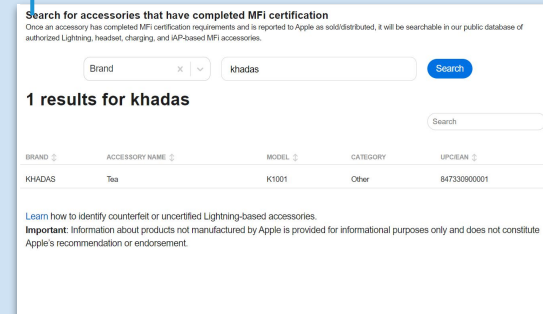
KHADAS Tea

OUR PARTNERS

GOOGLE FUCHSIA
Build Google Fuchsia for Khadas VIM2/3

GOOGLE AOSP
Khadas VIM3 is a reference board for AOSP

OPENCV
Khadas VIM3 is a partner of the OpenCV Community

USB & HDMI MEMBER
Khadas is a member of the HDMI & USB Foundations

APPLE MFI DEVELOPER
Khadas Tea is certified by the Apple MFi standard

HELPING MAKERS
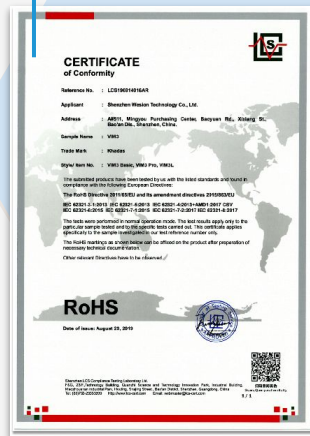
MAKER COMMUNITY
Vibrant community of makers
at forum.khadas.com

KHADAS 2021 COMMUNITY COMPETITION
Rewarding the top talents
in our Maker Community

KFCI AWARDS
Rewarding the most active
members in our Maker Community

ARMBIAN MEMBER
Financial contributor to
Armbian OS development

Khadas
Community

armbian

WHY CHOOSE KHADAS?

PROFESSIONAL SUPPORT
(docs.khadas.com)

1. Software & hardware support
2. Pre-built ROM images
3. dl.khadas.com
4. github.com/khadas

VIBRANT COMMUNITY
(forum.khadas.com)
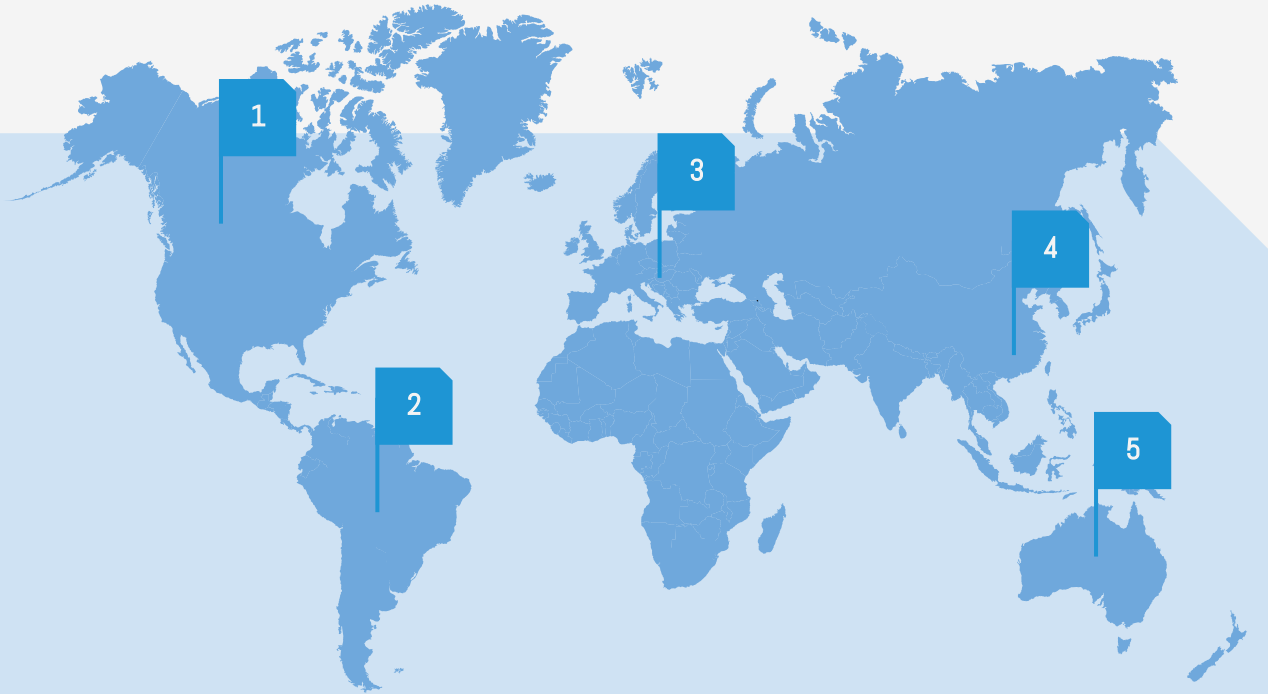
1. International, English speaking
2. Feedback and improvement
3. 3rd party ROMs, OOWOW, Armbian, Volumio, etc

TRENDY PRODUCTS
(www.khadas.com)

1. Technology to enhance life
2. Consumer focused

GLOBAL DISTRIBUTION

1 North America

2 South America

3 Europe

4 Asia

5 Oceania

Complete list: www.khadas.com/distributors
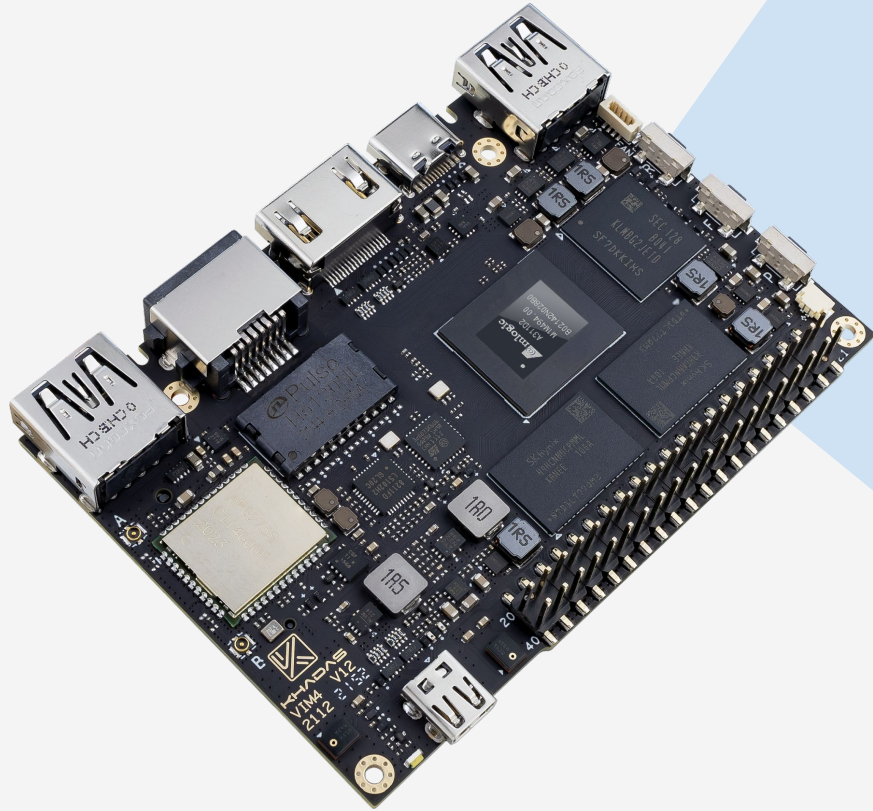
SINGLE BOARD COMPUTERS

KHADAS

VIM SERIES: VIM1S

SYSTEM-ON-CHIP

Amlogic S905Y4 SBC with OOWOW and AV1 4K60 decoding

CONNECTIVITY

USB 2.0 OTG, 5.0V DC Input
Ampak AP6256 IEEE 802.11 b/n/g/n/a/ac

GRAPHICS-PROCESSING-UNIT

ARM Mali-G31 MP2 GPU up to 850MHz, 4K@60fps AV1, VP9, H.265 Decoder, Supports Multi-video Decoding up to 4x 1080P@60fps, HDR10, HDR10+, HLG HDR Video Processing

MEMORY

32MB SPI FLASH, 2GB LPDDR4 + 16GB EMMC 5.0

Learn more: https://www.khadas.com/vim1s

VIM SERIES: VIM3L

SYSTEM-ON-CHIP

S905D3 x4 A55 at 1.9Ghz

Next generation, deep-neural-network applications, at 1.2 TOPS

12nm process, low-power consumption and high-efficiency

Ideal for mass-market HTPC applications

Learn more: https://www.khadas.com/vim3l

Competitive Advantage: https://dl.khadas.com/products/vim3/specs/vim3l_jeston-nano_comparisons.pdf

VIM SERIES: VIM3

SYSTEM-ON-CHIP

A311D big-little architecture. x4 2.2Ghz Cortex-A73, with x2 1.8Ghz Cortex-A53 cores.
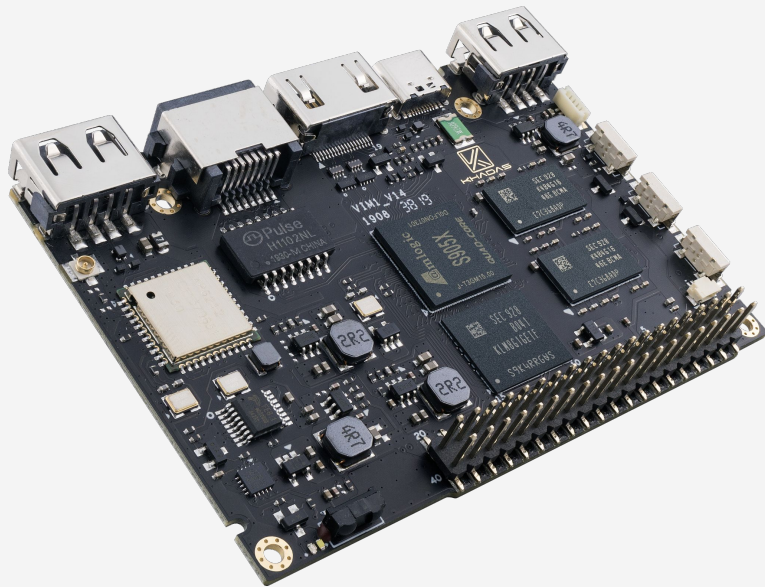
Next generation, deep-neural-network applications, at 5.0 TOPS

GRAPHICS-PROCESSING-UNIT

T820MP3 GPU, HDMI 2.0a, powerful VPU with 10-Bit 4K H.265/VP9@60fps playback
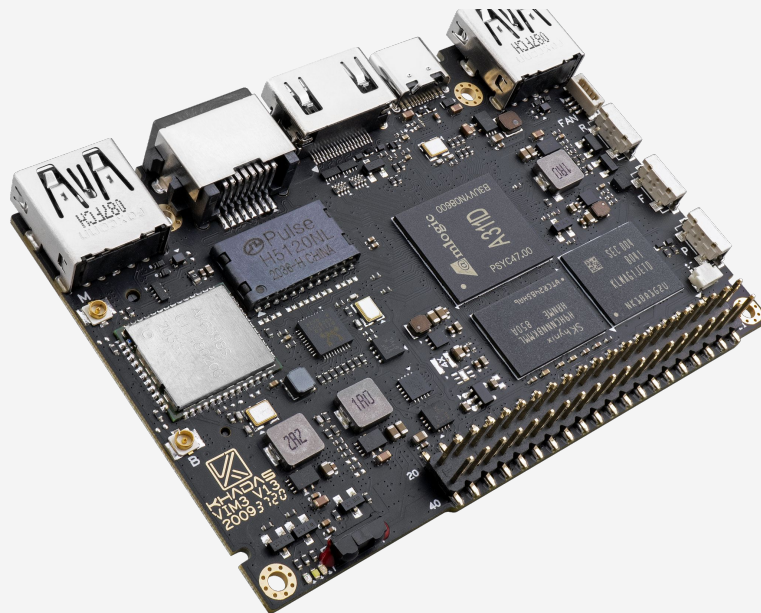
CONNECTIVITY

Use the Khadas KBI to switch the "combo interface" to USB-3.0 port or PCIe.

Wide-range of power input, from 5-20V via USB power delivery standard.

Dual independent displays via HDMI and MIPI-DSI. 3-axis g-sensor for display rotation.

4 lane MIPI-CSI, up to 8MP ISP, with 30 Pin 0.5mm Pitch FPC Connector.

MEMORY

up to 4GB LPDDR4 & 32GB eMMC

Learn more: https://www.khadas.com/vim3

VIM SERIES: VIM4

SYSTEM-ON-CHIP

Amlogic A311D2 2.2GHz Quad core ARM
Cortex-A73 and 2.0GHz Quad core
Cortex-A53 CPU
STM32G031K6 Co-Processor

GRAPHICS-PROCESSING-UNIT

HDMI 2.0a with 4K H.265/VP9 10 bit &
HDR10 video processing
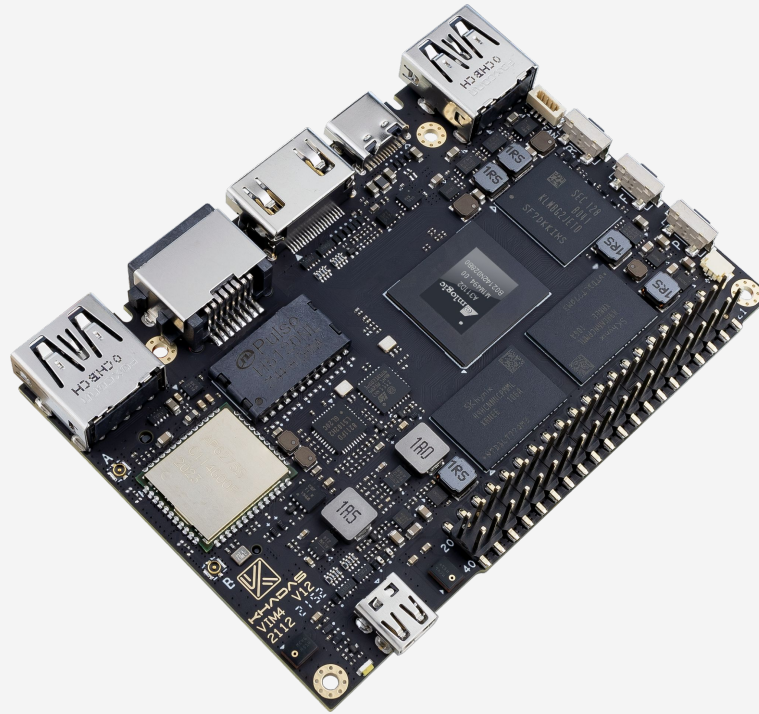
CONNECTIVITY

AP6275S Wi-Fi 6 Module
802.11b/n/g/n/a/ac/ax, 2T2R MIMO with
RSDB

Micro HDMI input, up to 4Kp60

Stereo Digital Microphones

V-by-One 8 lanes Interface, Resolution up
to 4096*2160 30 Pin 0.5mm Pitch FPC
Connector

MEMORY

8GB LPDDR4X 2016MHz, 64-bit RAM

Learn more: https://www.khadas.com/vim4

EDGE SERIES: EDGE-V

SYSTEM-ON-CHIP

Dual-core Cortex-A72 up to 1.8Ghz, Quad-Core Cortex-A53 up to 1.5Ghz

GRAPHICS-PROCESSING-UNIT

Mali T864 GPU, OpenGL ES1.1 to 3.1, OpenVG1.1, OpenCL, DX11

4K VP9, 4K 10-bit H.264/H.265 video decoding, up to 60fps
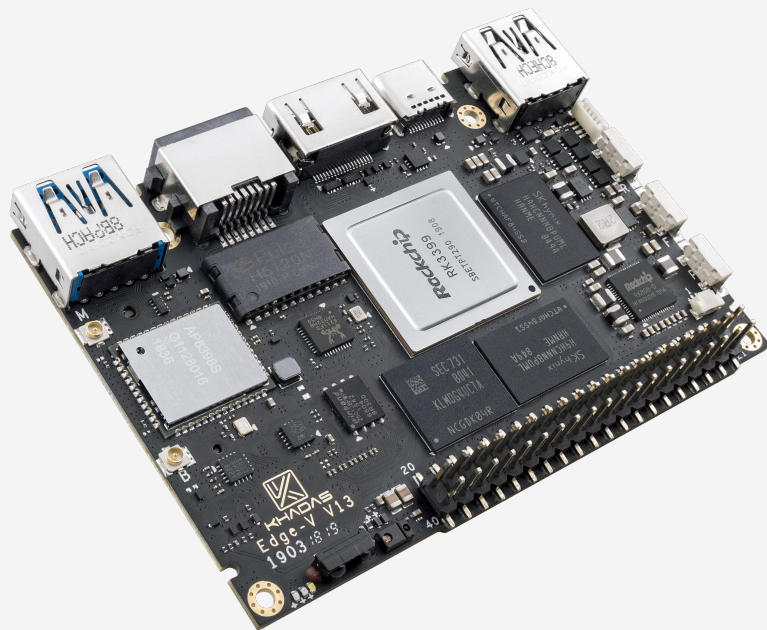
CONNECTIVITY

AP6398S, 802.11ac WiFI, with 2x2 MIMO with RSDB and Bluetooth v5.0

Khadas TST for entering upgrade mode even when boot loader is damaged

Full RK3399 SoC I/O output

MEMORY

16MB SPI Flash, STM8S003 MCU, 4GB LPDDR4, up to 128GB eMMC 5.1

Learn more: https://www.khadas.com/edge-v

EDGE SERIES: EDGE2

ROCKCHIP RK3588S

x4 Cortex-A76 up to 2.25Ghz,
x4 Cortex-A55 up to 1.8Ghz

GRAPHICS-PROCESSING-UNIT

4-core GPU, the ARM Mali-G610 MP4 (up to 1GHz clock speed)
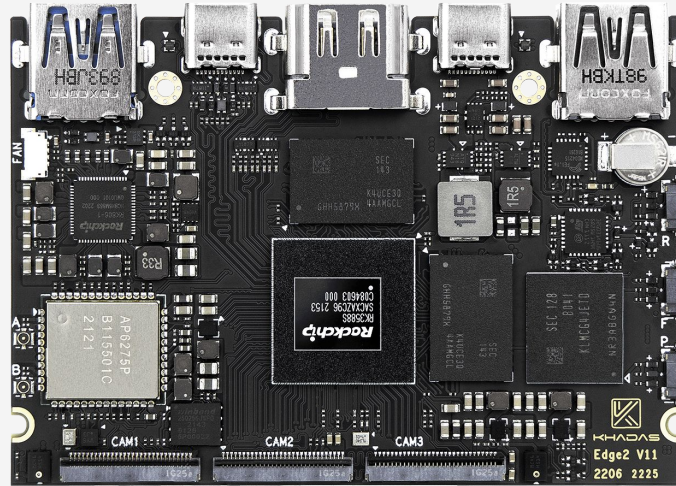
6 TOPS NPU

The NPU supports mainstream deep learning frameworks, such as TensorFlow, Pytorch, MxNET and so on. The powerful RK3588S brings optimized neural network performance to various A.I. applications.

MEMORY

Basic: 8GB 64-bit 2112MHz LPDDR4X + 32GB eMMC 5.1

Pro: 16GB 64-bit 2112MHz LPDDR4X 64GB eMMC 5.1

Learn more: https://www.khadas.com/edge2

AUDIO
PRODUCTS

KHADAS

TONE SERIES: TONE2

DIGITAL-TO-ANALOG CONVERSION

Tone2 utilizes the powerful XMOS XU208 processor with 8 cores & 8 threads for high performance bit-perfect decoding. Decode up to 768KHz PCM and DSD 512 (native) audio files and enjoy digital master quality audio.

Tone2 Maker Kit

The Tone2 Maker Kit supports both Makers and OEM (Original Equipment Manufacturer) customers. An MQA-licensed Tone2 DAC is available for OEM customers who wish to use Tone2 in retail products.

Learn more: https://www.khadas.com/tone2
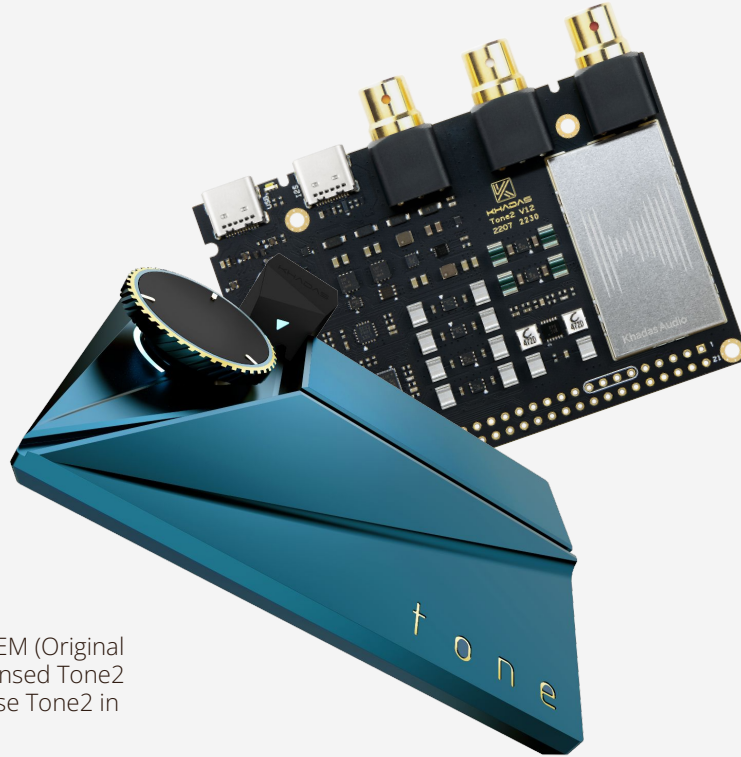
PERFORMANCE

Unprecedented dynamic range and ultra-low distortion.

THD+N ≤ 0.000126%, SNR ≥ 121dB, DNR ≥ 119dB

Crosstalk (Channel Separation) ≥ 120dB

Frequency Response ± 0.08dB

Ultra-low Phase Noise Clock Jitter

TONE SERIES: TONE2 PRO

DIGITAL-TO-ANALOG CONVERSION

XMOS XU216

ESS ES9038Q2M

TI OPA1612

CONNECTIVITY

World's first balanced RCA line-out transformational standard for the audio industry

PERFORMANCE

Professional Hi-Fi DAC & Headphone Amplifier

MQA & DSD playback, bit-perfect audio transmission

CHASSIS

Black, Red, Blue

Enclosure/Volume Knob: Aircraft-Grade Aluminum

Learn more: https://www.khadas.com/tone2pro

TEA SERIES: TEA BASIC

DIGITAL-TO-ANALOG CONVERSION

ESS ES9281AC Pro DAC for desktop-class audio

CONNECTIVITY

Compatible with Apple Magsafe (iPhone 12 and later)

Hi-Res Bluetooth Audio with LDAC and aptX HD

Microphones for Making and Receiving Calls over Bluetooth

PERFORMANCE

Bit-Perfect Audio Transmission via USB-C wired connection

Playback Hi-Res MQA, DSD, PCM, Lossless Audio from Your Smartphone

1160 mAh Lithium Polymer Battery for 8 Hours of Continuous Music Playback

CHASSIS

Granite Grey, Teal Blue

Enclosure: Aircraft-Grade Aluminum

Learn more: https://www.khadas.com/tea

AUDIO RECEIVER MODULE: BT MAGIC

Description

BT Magic is a Hi-Res Bluetooth audio receiver module exclusively designed by Khadas for the Tone2 series. Experience consistent and interference free wireless audio, by simply plugging the module into Tone2's USB (I2S) port.

Features

- Qualcomm QCC5125, Bluetooth 5.1
- Support SBC, AAC, aptX / aptX-LL / aptX-HD, LDAC audio formats
- Hi-Resolution Bluetooth Audio
- Sample Rate up to 24bit 96KHz
- RGB LED lights indicate the playback Bluetooth format
- Stable transmission range of up to 20 meters, smartphones providing the longest range, followed by laptops, then desktops. (based on laboratory tests, your results may differ)

Learn more: https://www.khadas.com/product-page/bt-magic
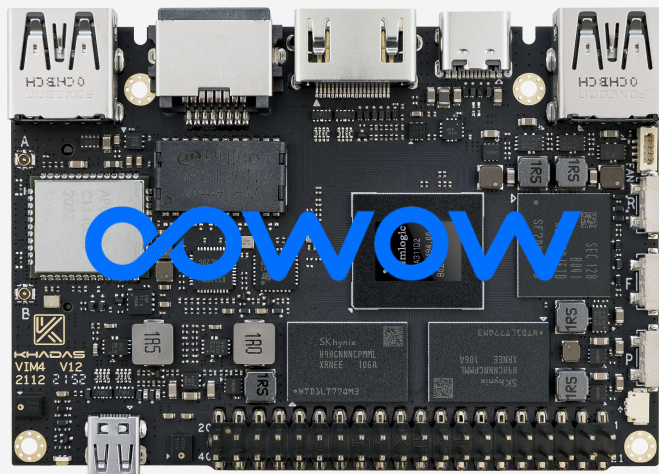
SOFTWARE SUPPORT

OOWOW

KHADAS

OOWOW: EMBEDDED SERVICE

WHAT IS OOWOW?

OOWOW is an embedded service (integrated into your device) - it can be run any time if you need to perform essential maintenance services on your device.

EMBEDDED INTO VIM4

VIM4 is the first device from Khadas that includes the OOWOW embedded service.

Since VIM4 comes without any pre-installed OS, users can use OOWOW to select and install the preferred OS.

SUPER-FAST OS INSTALLATION

OOWOW provides rapid online OS download and installation, which will improve quality of life for single board computer users - with OOWOW, you can install / reinstall your preferred OS in just 2-3 minutes.

GUIDED BY A WIZARD

The OOWOW wizard will guide you to install a new OS in just 4 steps, and it automatically starts if your device storage is empty.

FENIX: A ONE STOP SOLUTION

What Is Fenix?

Fenix is a one-stop script set to build
Ubuntu/Debian images.

Features:

- Easy to use, one-click compilation of Ubuntu/Debian images
- Supports all Khadas SBCs
- Supports CI (Continuous integration)
- Supports compiling under Docker

Useful Links

- GitHub: https://github.com/khadas/fenix
- Instruction: https://docs.khadas.com/products/sbc/vim4/development/linux/build-ubuntu
- CI Images: https://build.khadas.com/khadas/fenix/

PRODUCTS SUMMARY

KHADAS

KHADAS PRODUCTS

For Makers:

- VIM Series
  - VIM1/1S/2/3/3L/4
- Edge Series
  - Edge-v
  - Edge2
- Tone Series
  - Tone1 (Tone Board)
- Mind Series
  - Mind (W.I.P)
- Integrated OS
  - OOWOW

For Audiophiles:

- Tone Series
  - Tone2 Pro
  - Tone2
  - BT Magic
- Tea Series
  - Tea
  - Tea Pro (W.I.P)

See all products: https://www.khadas.com

KHADAS ACCESSORIES

- **Screens**
  - TS050 Touchscreen
- **Extension Boards**
  - M2X
  - New M2X
  - M2X WWAN
  - Edge-IO
  - Edge2-IO
  - Juice Module
- **LTE Modules**
  - EM06 4G LTE Module
  - 5G NR Module
- **Cameras**
  - IMX214
  - OS08A10

- **Heatsinks**
  - Edge Heatsink
  - Edge2's Active Cooling Kit
  - Passive VIM Heatsink
  - New VIM Heatsink
- **Fans**
  - 3705 Cooling Fan
- **Cases**
  - DIY Case
  - DIY Case 2
- **Remotes**
  - Infrared Remote
- **Batteries**
  - CR1220 RTC Battery
  - BAT-D01 Module

- **Power Adapters**
  - 10W USB-A
  - 24W USB-C
  - 30W USB-C
- **Cables**
  - HDMI
  - VIN-to-VIN
  - USB-C to C
  - USB-C to A (2.0)
- **DACs**
  - Tone1 (VIM Edition)

See all accessories: https://dl.khadas.com/products/add-ons/khadas_sbc_accessories_guide.pdf

AMAZING KHADAS, ALWAYS AMAZES YOU!

Contact Us:

Email: hello@khadas.com
Website: www.khadas.com
Community: forum.khadas.com
Documentation: docs.khadas.com