

EC-R3568PC

Quad-Core 64Bit AI Embedded Computer

V1.0



T-CHIP INTELLIGENCE TECHNOLOGY CO.,LTD.
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| Update history

Version	Date	Details
V1.0	2022-5-18	initial version

| Directory

1. Overview.....4

2. Technical Parameter.....6

3. Dimensions.....7

4. Interface definition.....8

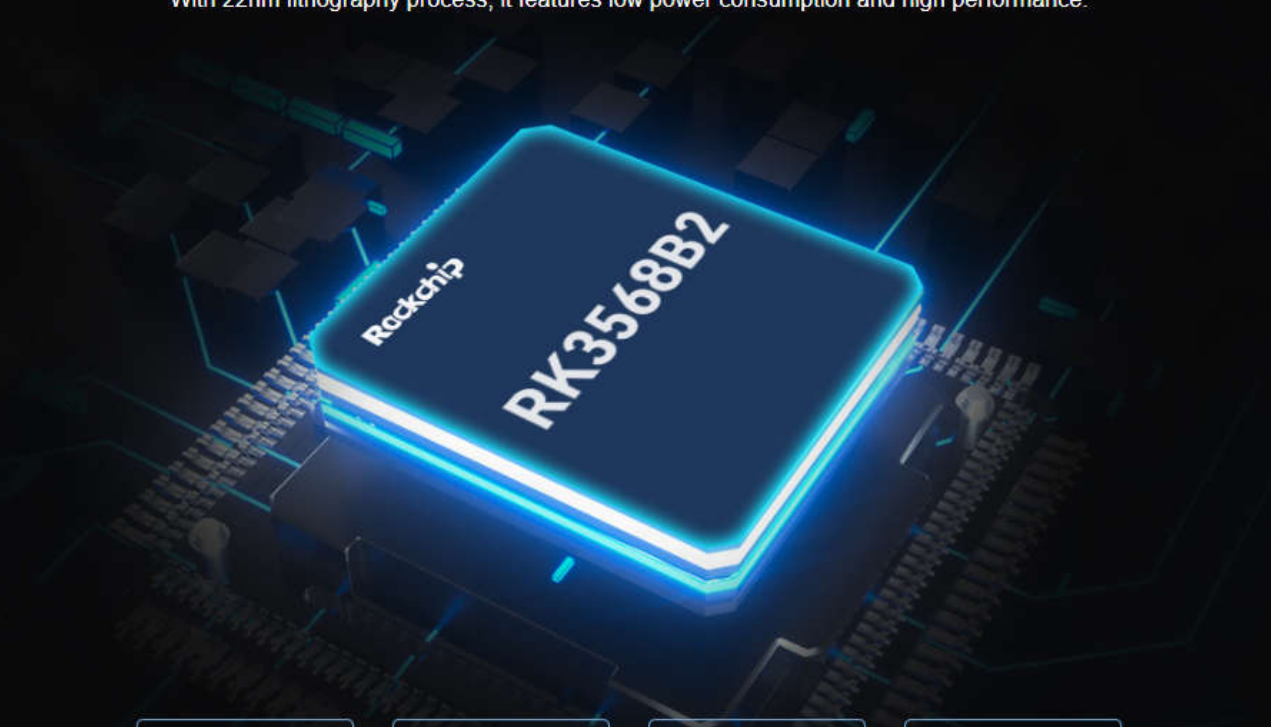
5. About us9

Overview

EC-R3568PC is equipped with Rockchip quad-core processor RK3568 which is configured with Mali-G52 dual-core GPU and high-performance 1 Tops NPU, supporting up to 8G RAM. Configured with built-in dual Gigabit Ethernet, dual-band WiFi 6, Bluetooth 5.0. The various interfaces make it suitable for scenarios such as smart NVR, cloud terminal, IoT gateway and industrial control.

RK3568 quad-core 64-bit processor

RK3568 quad-core 64-bit Cortex-A55 processor has frequency up to 2.0GHz — the efficiency is greatly improved. With 22nm lithography process, it features low power consumption and high performance.



Quad-core Cortex-A55 2.0GHz 22nm

8GB large RAM

It supports up to 8GB RAM, with up to 32Bit width and frequency up to 1600MHz, meeting the requirements of running large-memory products.

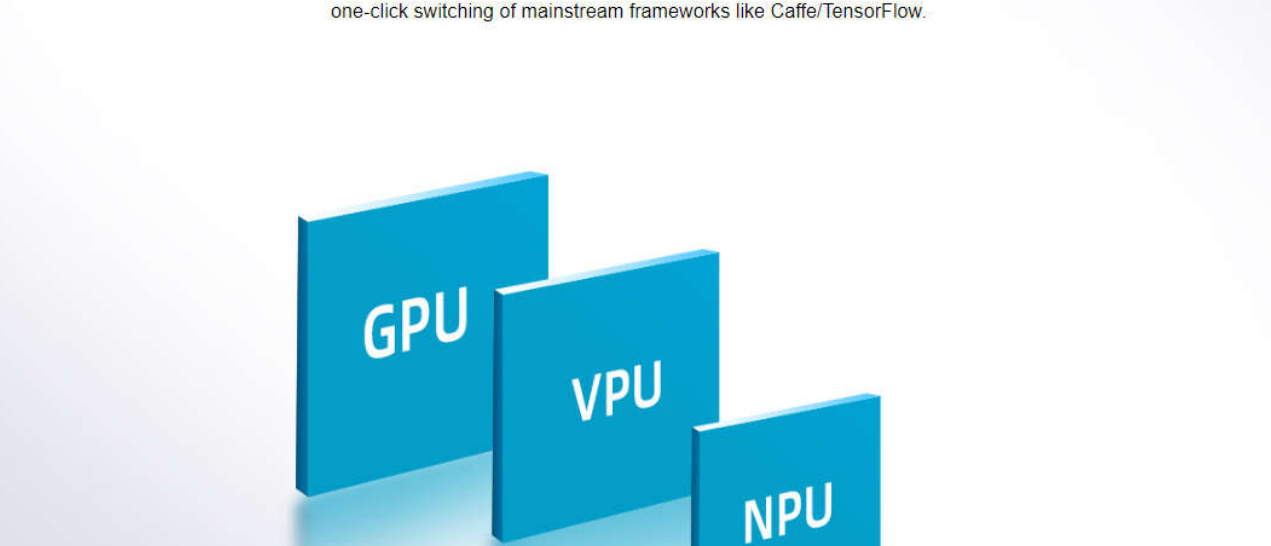


Large RAM
8GB

High Frequency
1600MHz

Integrated co-processors

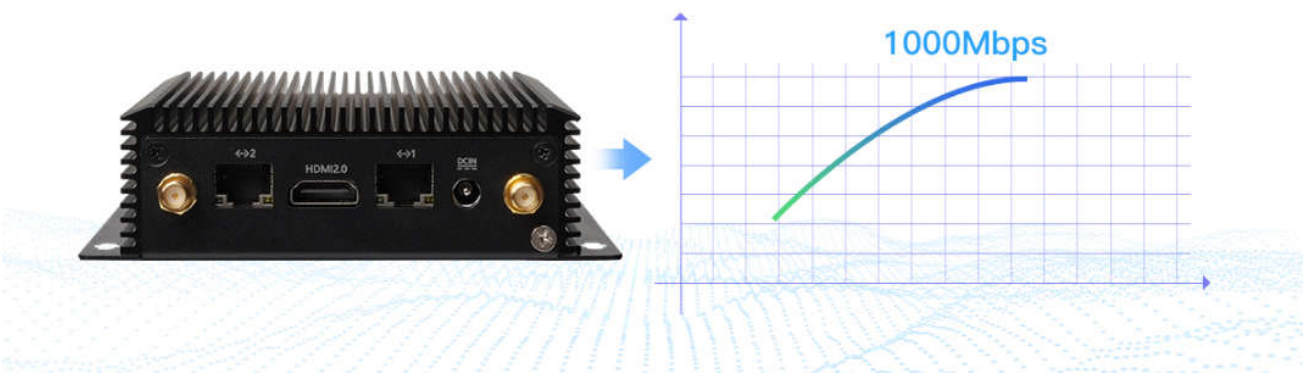
It is integrated with dual-core GPU, high-performance VPU and high-efficiency NPU. The GPU supports OpenGL ES3.2/2.0/1.1, Vulkan1.1. The VPU can achieve 4K 60fps H.265/H.264/VP9 video decoding and 1080P 100fps H.265/ H.264 video encoding. The NPU supports one-click switching of mainstream frameworks like Caffe/TensorFlow.



GPU VPU NPU

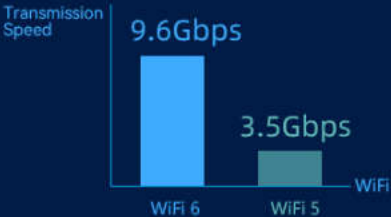
Dual Gigabit Ethernet

It is equipped with dual Gigabit Ethernet ports, through which internal and external network data can be accessed and transmitted, improving network transmission efficiency, and meeting the needs of products with multiple network ports such as NVR and industrial gateway.



Powerful wireless network communication

Supporting 2.4GHz/5GHz dual-band WiFi 6 (802.11ax) and Bluetooth 5.0, enabling the product to have a higher-rate, larger-bandwidth and lower-latency communication.



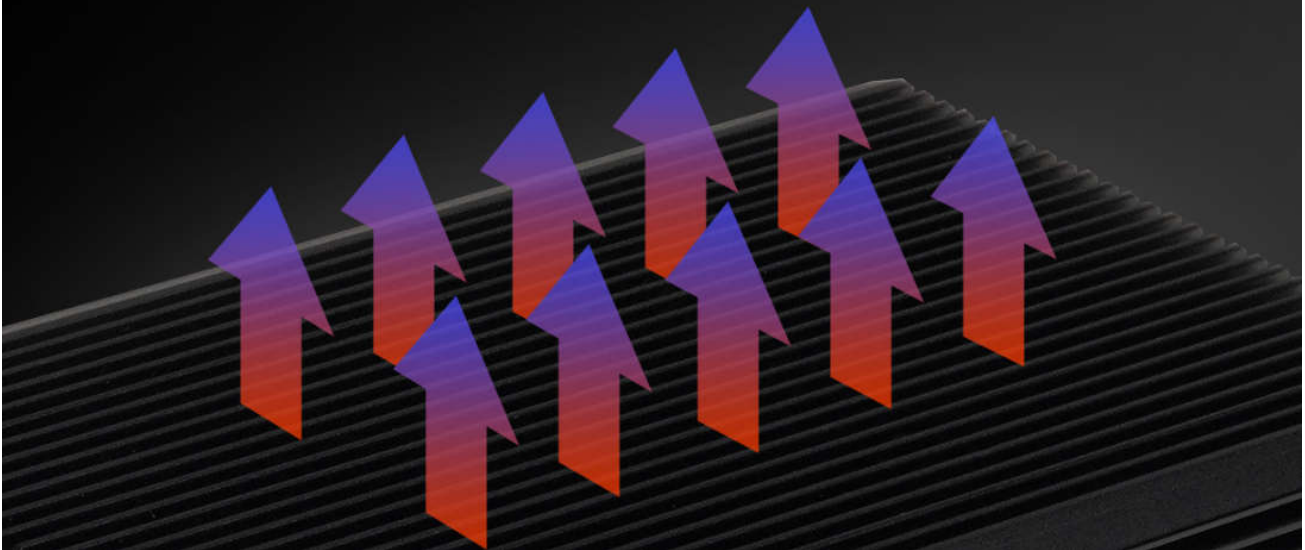
Onboard M.2 and SATA3.0

The onboard M.2 PCIe3.0 and SATA3.0 interfaces can be connected with an M.2 NVMe SSD and a 2.5-inch SSD/HDD respectively, owning the advantages of high-speed read and write and large capacity



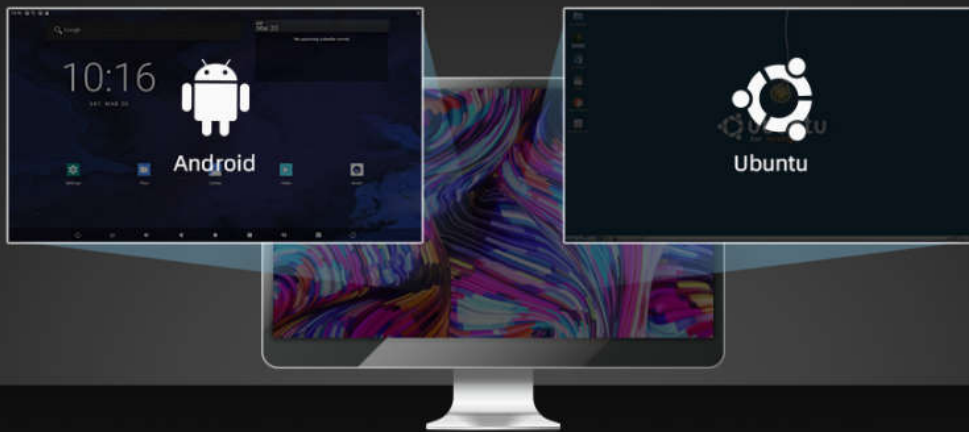
Excellent heat dissipation

Equipped with industrial-grade metal enclosure, with fanless design but efficient heat dissipation, it features low power consumption and zero noise; and it supports 7x24h continuous and stable operation.



Supports various systems

Android 11, Ubuntu 20.04, Buildroot and other operating systems are supported.
It enables stable operation and customization for industries.



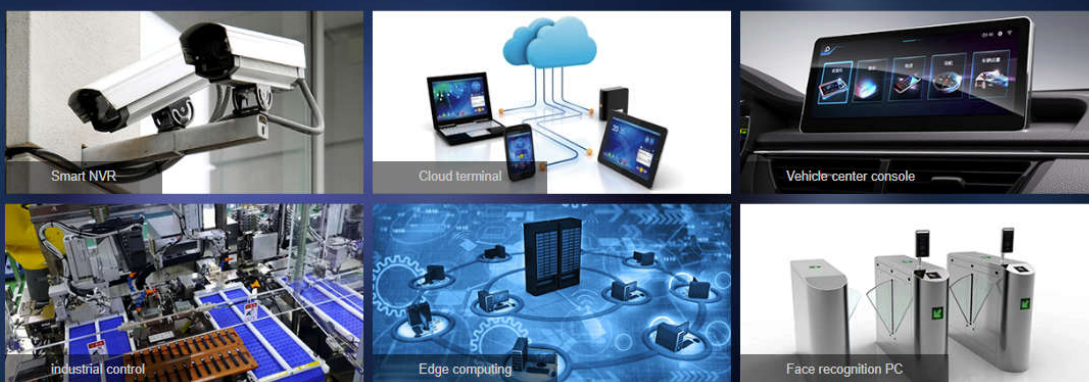
Abundant resources for customization

A complete SDK, development documents, examples, technology documents, tutorials and other resources are provided for the users to make a further customization



A wide range of applications

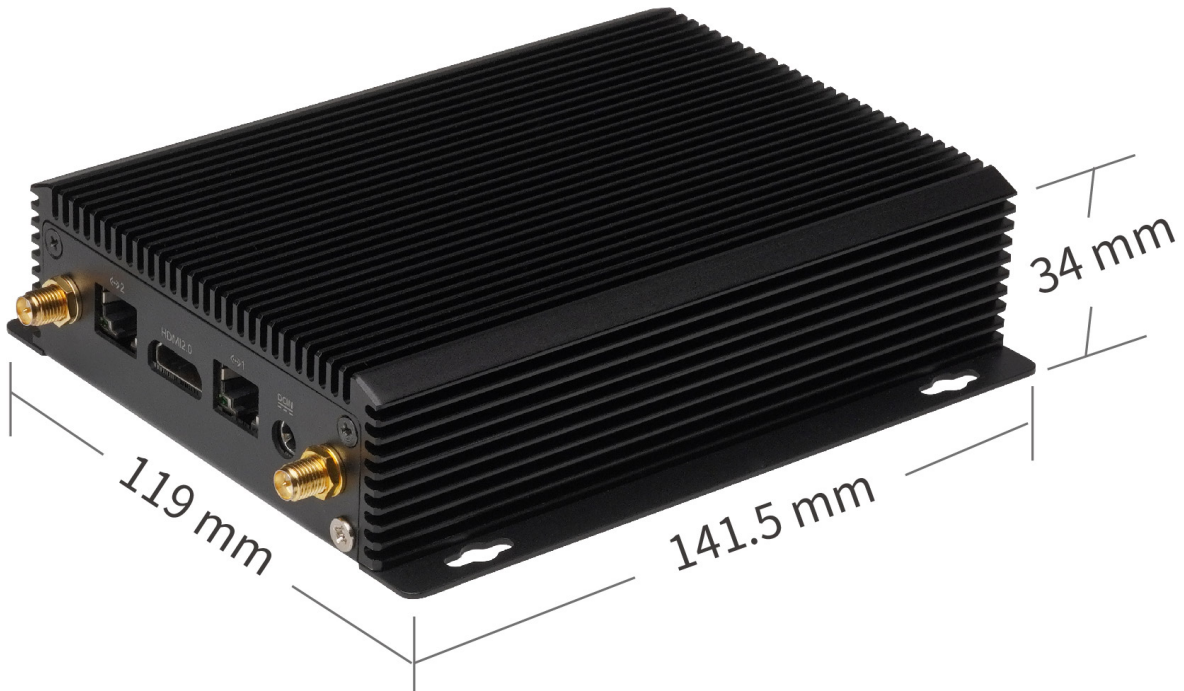
This embedded computer can be widely used in smart NVR, cloud terminal, IoT gateway, industrial control, edge computing, face recognition PC, NAS, vehicle center console, etc.



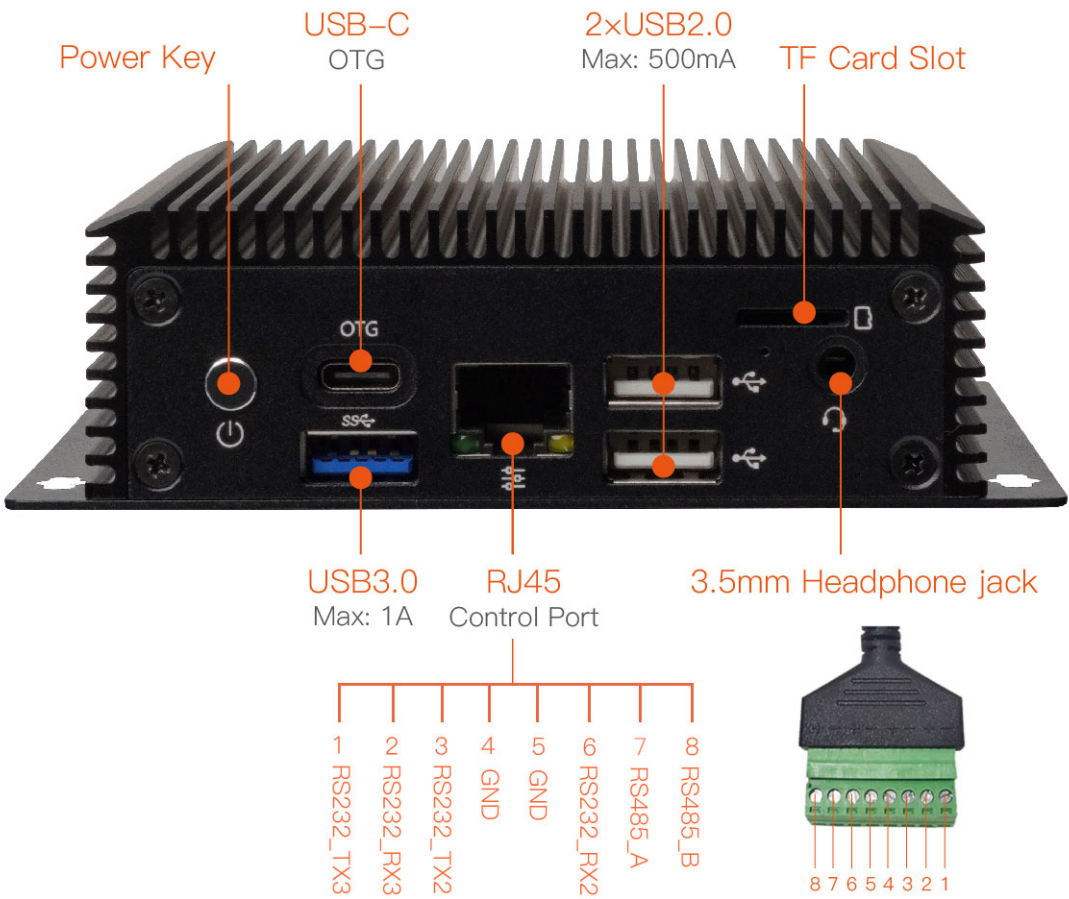
Specification

Basic Specifications	
SOC	RockChip RK3568
CPU	Quad-core 64-bit Cortex-A55 processor, 22nm lithography process, frequency up to 2.0GHz
GPU	ARM G52 2EE Support OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1 Embedded high-performance 2D acceleration hardware
VPU	Video decoding: 4K@60fps H.265/H.264/VP9 Video encoding: 1080P@60fps H.265/H.264
NPU	1Tops@INT8, integrated high-performance AI accelerator RKNN NPU, support one-click switching of Caffe TensorFlow / TFLite / ONNX / PyTorch / Keras / Darknet
RAM	2GB/4GB/8GB LPDDR4
Storage	16GB/32GB/64GB/128GB eMMC 16MB SPI Flash C
Storage Expansion	1 × M.2 PCIe 3.0 (2242 / 2280 NVMe SSD) 1 × SATA 3.0 (2.5" , 7 mm thickness SSD/HDD) 1 × TF Card Slot
Hardware Specifications	
Wireless	Support 802.11ax (WiFi 6) ,Compatible with 802.11 a/b/g/n/ac protocol Support 2.4GHz, 5GHz dual-band WiFi Support Bluetooth5.0 (BLE)
Ethernet	2×1000Mbps dual Gigabit Ethernet (RJ45)
Video Output	1 × HDMI2.0, support 4K@60Hz output
Audio	1 × HDMI audio output 1 × 3.5mm audio jack
USB	1 × USB3.0 (Max Current: 1A) 2 × USB2.0 (Max Current: 500mA) 1 × USB-C (USB2.0 OTG)
Button	1 × Power key 1 × Update key (at the bottom of 3.5mm jack)
Interface	1 × RJ45 Control Port (1×RS485 + 2×RS232)
Power	DC12V (5.5*2.1mm port, support 9V~24V wide voltage input)
OS/Software	
OS	Support Android 11.0, Ubuntu 20.04, Buildroot + QT and Station OS Support TF card, EMMC and USB flash disk boot
General	
Size	141.5mm×119mm×34mm
Appearance	Industrial-grade metal enclosure, all aluminium alloy top cover, matte black, and fanless design
Weight	≈0.72kg
Power Consumption	Idle: 0.3W Typical: 4.2W Max: 7.8W
Environment	Operating Temperature: -20℃ - 60℃ Storage Temperature: -20℃ - 70℃ Storage Humidity: 10% ~ 80 %

Dimension



Interface

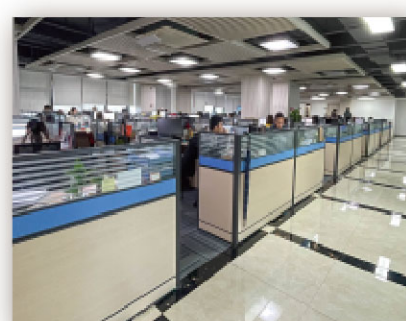


T-CHIP TECHNOLOGY

Create Value for Customers
Pursue Sustainable Development

About us

T-CHIP focuses on R&D, design, production and sale of open source intelligent hardware, AI, IoT and audio product, and provides the whole solution of intelligent hardware products. T-CHIP is a Independent Design House officially authorized by RockChip and its strategic partner. We have been working closely with RockChip and contributing to embedded electronic industry for over 15 years. "Create Value for Customers, Pursue Sustainable Development" is our philosophy. We hope to achieve win-win development and move together for a shared future



Our Brands



Firefly is an open source brand in 2014. "Make technology more simple, Make life more intelligent" is its philosophy. We promote intelligent upgrades in the industries of new technology, intelligent hardware, AI, AIOT, and digital audio product, and build a more open and professional platform for intelligent hardware technology



Station PC is a new brand in 2020, consisting of the core geek members. We create entertainment products for new generation of people with innovative spirit through exploration of pan-entertainment. "More Entertainment, More Free Creation" is its philosophy. We aim at making everyone enjoy themselves and awakening interesting souls with more extreme product experience



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Make life more intelligent



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