

# Android TV Box Android 9.0

## Multifunctional intelligent industrial control board

Amlogic S922X / S905D3 / T972



V-By-One; Direct 4K Dot Screen; Android 9.0 Or Above

[www.sztomato.com](http://www.sztomato.com)

Specifications	
Model No.	Amlogic S922X Android TV Box Android 9.0
CPU	Amlogic S922X 64-bit quad core ARM® Cortex™ A73 CPU and dual core ARM® Cortex™ A53 CPU
GPU	ARM MaliTM-G52 MP4 GPU processor
ROM	2GB/4GB LPDDR4
Internal Storage	16GB/64GB eMMC
OS	Android 9.0
Video&Audio CODEC	
Video/Picture CODEC	Amlogic Video Engine (AVE) with dedicated hardware decoders and encoders HW UHD 4K H.265 75fps 10-bit video decoder & low latency 1080p H.265/H.264 60fps encoder Support multi-video decoder up to 4Kx2K@60fps+1x1080P@60fps Supports multiple "secured" video decoding sessions and simultaneous decoding and encoding Video/Picture Decoding VP9 Profile-2 up to 4Kx2K@60fps H.265 HEVC MP-10@L5.1 up to 4Kx2K@60fps AVS2-P2 Profile up to 4Kx2K@60fps H.264 AVC HP@L5.1 up to 4Kx2K@30fps H.264 MVC up to 1080P@60fps MPEG-4 ASP@L5 up to 1080P@60fps (ISO-14496) WMV/VC-1 SP/MP/AP up to 1080P@60fps AVS-P16(AVS+) /AVS-P2 JiZhun Profile up to 1080P@60fps MPEG-2 MP/HL up to 1080P@60fps (ISO-13818) MPEG-1 MP/HL up to 1080P@60fps (ISO-11172) RealVideo 8/9/10 up to 1080P@60fps H.265/H.264 video encoding up to 1080P@60fps with low latency Multiple language and multiple format sub-title video support MJPEG and JPEG unlimited pixel resolution decoding (ISO/IEC-10918) Supports JPEG thumbnail, scaling, rotation and transition effects Supports *.mkv, *.wmv, *.mpg, *.mpeg, *.dat, *.avi, *.mov, *.iso, *.mp4, *.rm and *.jpg file formats Supports Dolby VisionOptional, HDR10, HDR10+, HLG and PRIME HDR processing
Video/Picture Encoding	Independent JPEG and H.265/H.264 encoder with configurable performance/bit-rate JPEG image encoding H.265/H.264 video encoding up to 1080P@60fps with low latency
Video Output	Built-in HDMI 2.1 transmitter including both controller and PHY with CEC, Dynamic HDR and HDCP 2.2, 4Kx2K@60 max resolution output CVBS 480i/576i standard definition output Supports all standard SD/HD/FHD video output formats: 480i/p, 576i/p, 720p, 1080i/p and 4Kx2K 4-lane MIPI DSI interface, resolution up to 1920*1080 with rotation and panel calibration Supports MP3, AAC, WMA, RM, FLAC, Ogg and programmable with 7.1/5.1 down-mixing Built-in serial digital audio SPDIF/IEC958 input/output and PCM input/output 3 built-in TDM/PCM/I2S ports with TDM/PCM mode up to 84kHz x32bits x 8ch or 96kHz x 32bits x 32ch and I2S mode up to 384kHz x 32bitsx8ch Digital microphone PDM voice input with programmable CIC, LPF & HPF, support up to 8 DMICs Built-in stereo audio DAC Supports concurrent dual audio stereo channel output with combination of analog+PCM or I2S+PCM
Decoder Format	HD MPEG1/2/4, H.265/HEVC, HD AVC/VC-1, RM/RMVB, Xvid/DivX3/4/5/6, RealVideo8/9/10
Media Format	Avi/Rm/Rmvp/Ts/Vob/Mkv/Mov/ISO/wmv/asf/flv/dat/mpg/mpeg
Music Format	MP3/WMA/AAC/WAV/OGG/DDP/TrueHD/HD/FLAC/APE
Photo Format	HD JPEG/BMP/GIF/PNG/TIFF
Port	
USB host	USB2.0, Max480Mbps/USB3.0, Max5.1Gbps
SIM	MICRO SIM
HDMI	HDMI 2.2/1ch Lvds/1ch EDP
LAN	RJ45 wire Ethernet connection 100/1000M Ethernet support
WiFi/ Bluetooth	AP6398S(Wi-Fi+BT) 2.4G+5.8G

4G	PCIE Port
TF	microSD(Max 128G)
HDD	Support SATA Max2TB(Not included)
<b>Power</b>	
Power Supply	12V DC/3AΦ5.5*Φ2.5mm

This product is the network Android system motherboard, which is suitable for intelligent display terminal equipment, industrial automation terminal, computer vision/algorithm, 3D experience, game/entertainment equipment, high-performance Face Recognition calculation/storage, AI intelligence with high performance requirements. It can be widely used as the high-end demand intelligent mainboard of finance, advertising, security, transportation, public transportation and other industries.

This product adopts the latest generation of 12 nm ultra-low power AI chip s922x of Amlogic. It is an advanced application processor, integrating a powerful CPU, GPU subsystem, secure 4K video codec engine and first-class HDR image processing. The CPU of S922x main system adopts large and small architecture, which integrates four core arm cortex-a73 CPU cluster and dual core cortex-a53 cluster with unified secondary cache to improve system performance. Each CPU core includes a separate neon SIMD coprocessor to improve the software media processing capacity. Ave-10 can decode 4kx2k resolution video at a speed of 75 frames/second, and has a complete trusted video path (TVP) for security applications, supporting complete formats, including: MVC, MPEG-1/2/4, vc-1/WMV, AVS, AVS +, avs2 realvideo, MJPEG stream, H.264, h265-10, VP9 and JPEG pictures without size restrictions. The independent encoder can encode JPEG or h.265/h.264 format, up to 1080p, 75 frames per second. It supports 4kx2k @ 60fp (3840 \* 2160) output of hdmi2.2 interface and 4K point screen of V by one interface. It supports HDCP 2.2, stereo audio DAC, CVBS output, 4-channel Mipi DSI interface, multi TDM, PCM, I2S and SPDIF digital audio I/O interface, 8-Channel far-field PDM digital microphone (dmic) input and DVP camera interface. The product comes with 2x2 WiFi (supporting 2.4G and 5.8G dual frequency) + 4.1 wireless network module, supporting Gigabit Ethernet interface and infrared remote control, keyboard and mouse operation.

### Highlights

- o Amlogic 64-bit quad core ARM® Cortex™ A73 CPU and dual core ARM® Cortex™ A53 CPU
- o ARM Mali-G52 MP4 GPU processor
- o HW UHD 4KH.265 75fps 10-bit video decoder & low latency 1080p H.265/H.264 60fp sencoder
- o Dolby Visionand HDR10, HDR10+, HLG and PRIME HDR video processing
- o Build in Cortex-M4 core for always on processing
- o TrustZone based security for DRM video streaming
- o WIFI, BT,USB, SD, Ethernet, Analog Audio
- o Power management auxiliary processor

Amlogic S922X is an advanced application processor designed for Android hybrid OTT/IPTV Set Top Box(STB) and high-end media box applications. It integrates a powerful CPU, GPU subsystem, a secured 4K video CODEC engine and a best-in-class HDR image processing pipeline withall major peripherals to form the ultimate high-performance multimedia AP.

The main system CPU is based on Big. Little architecture which integrates a quad-core ARM Cortex-

A73 CPU cluster and a dual-core Cortex-A53 cluster with united L2 cache to improve system performance. Each CPU core includes the separate NEON SIMD co-processor to improve software media processing capability.

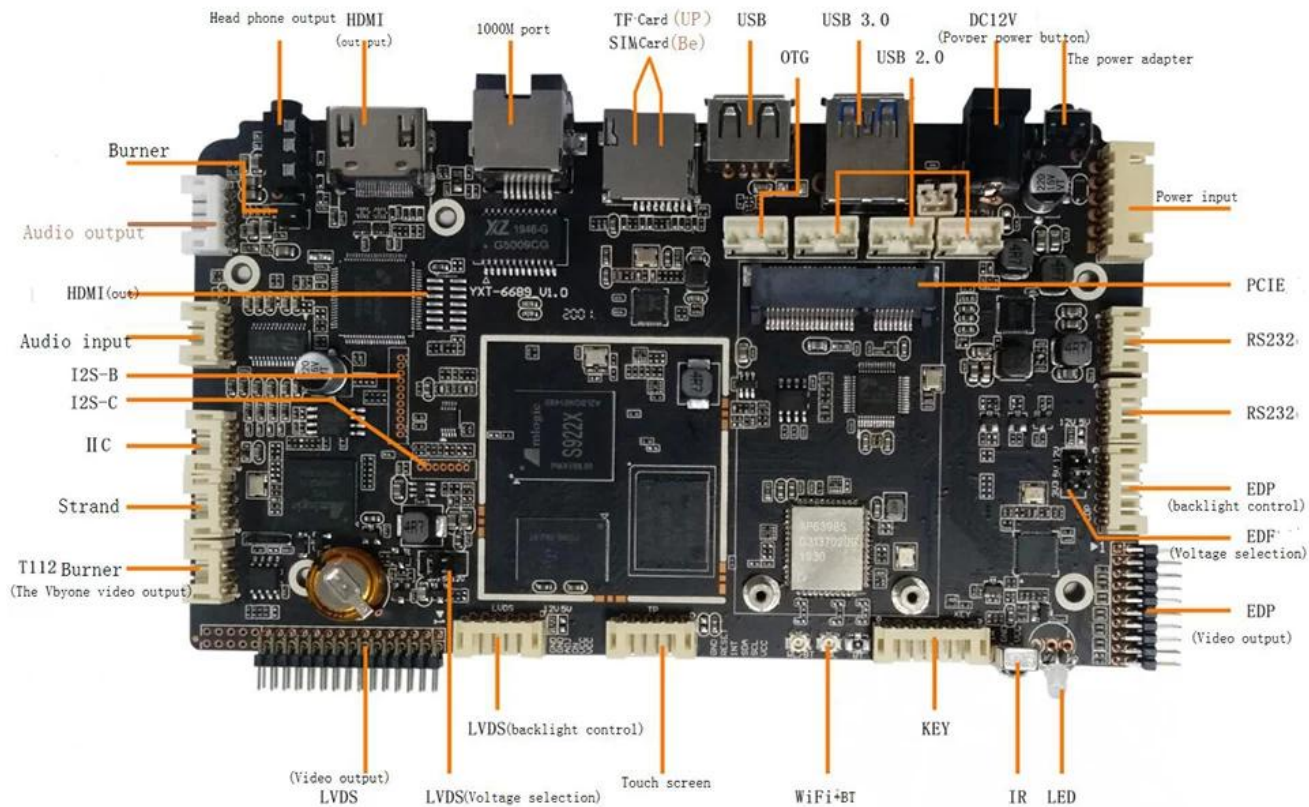
The graphic subsystem consists of two graphic engines and a flexible video/graphic output pipeline. The ARM Mali-G52 MP4 GPU handles all OpenGL ES 3.2 Vulkan 1.0 and OpenCL 2.0 graphic programs, while the 2.5D graphics processor handles additional scaling, alpha, rotation and color space conversion operations. Together, the CPU and GPU handle all operating system, networking, user-interface and gaming related tasks. The video output pipeline includes Dolby Vision optional HDR10, HDR10+, HLG and PRIME HDR processing, REC709/BT2020 processing, motion adaptive edge enhancing de-interlacing, flexible programmable scalar, and many picture enhancement filters before passing the enhanced image to the video output ports.

Amlogic Video Engine (AVE-10) offloads the Cortex-A53 CPUs from all video CODEC processing. It includes dedicated hardware video decoder and encoder. AVE-10 is capable of decoding 4Kx2K resolution video at 75fps with complete Trusted Video Path (TVP) for secure applications and supports full formats including MVC, MPEG-1/2/4, VC-1/WMV, AVS, AVS+, AVS2 RealVideo, MJPEG streams, H.264, H.265-10, VP9 and also JPEG pictures with no size limitation. The independent encoder is able to encode in JPEG or H.265/H.264 up to 1080p at 60fps.

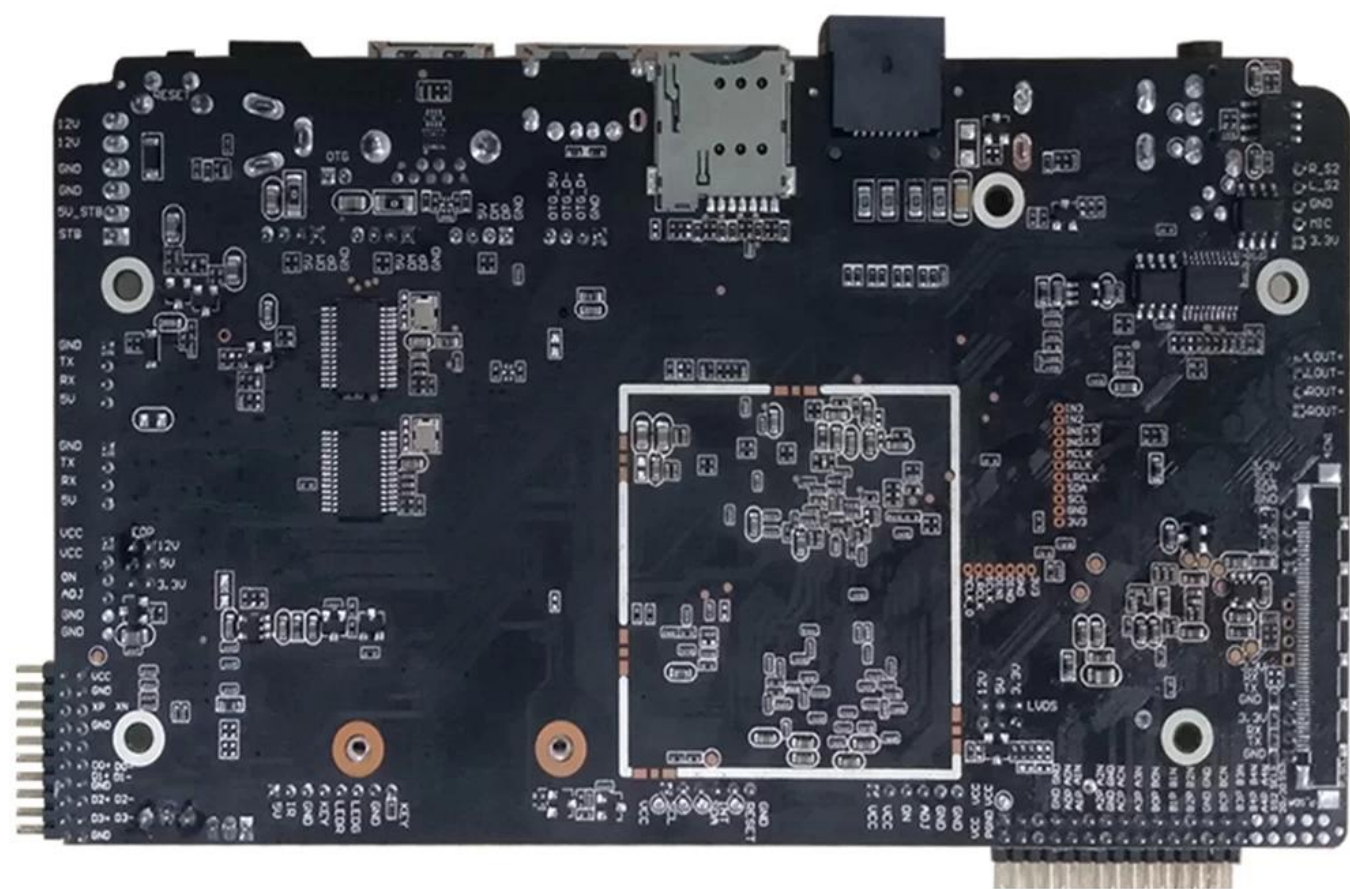
Amlogic S922X integrates all standard audio/video input/output interfaces including a HDMI 2.1 transmitter with 3D, Dynamic HDR, CEC and HDCP 2.2 support, stereo audio DAC, a CVBS output, 4-lane MIPI DSI interface, multiple TDM, PCM, I2S and SPDIF digital audio input/output interfaces, 8 channel far-field PDM digital microphone (DMIC) inputs and a DVP camera interface.

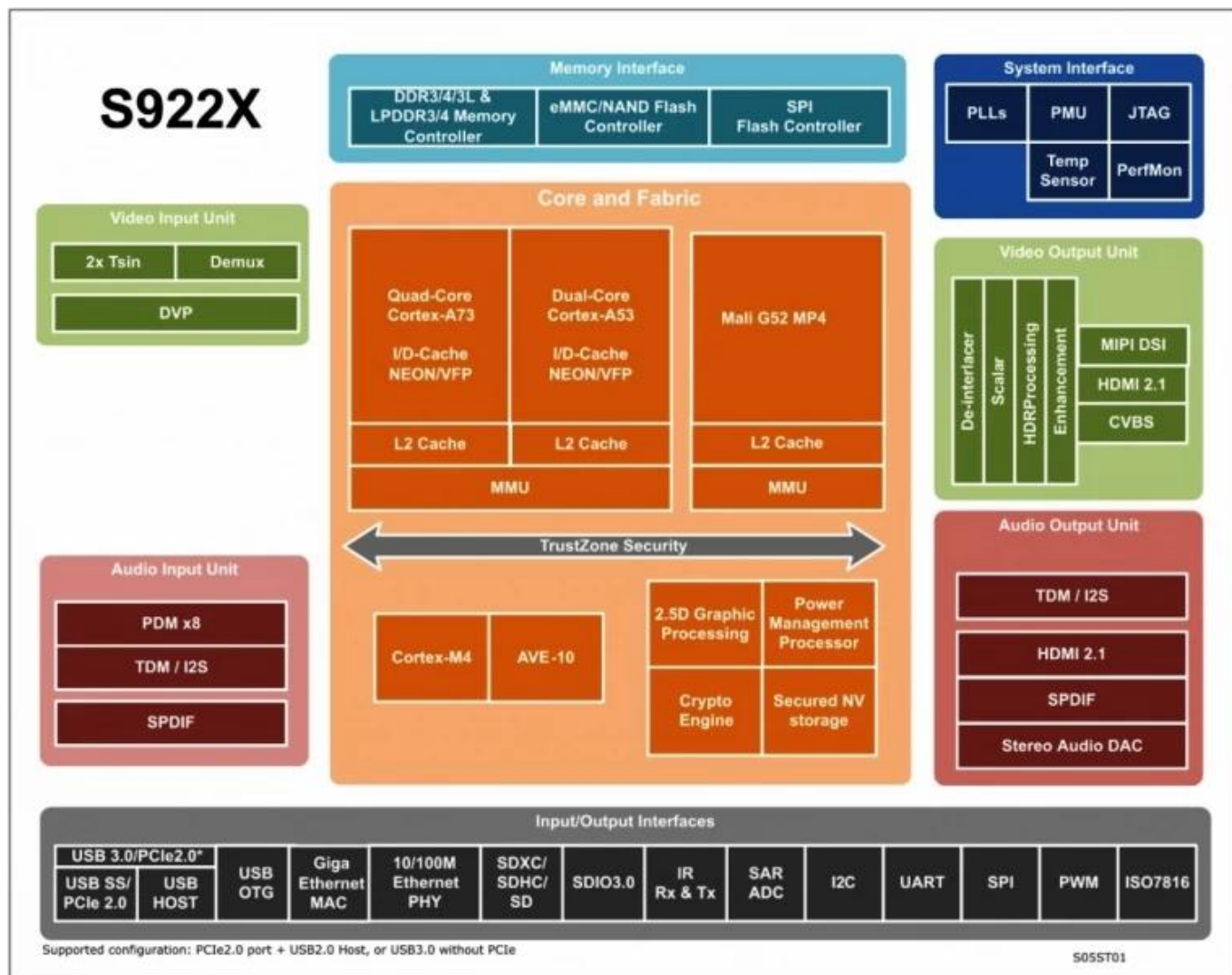
Amlogic S922X also integrates a set of functional blocks for digital TV broadcasting streams. The built-in two demux can process the TV streams from the serial and parallel transport stream input interface, which can connect to external tuner/demodulator.

The processor has rich advanced network and peripheral interfaces, including a 10/100/1000M Ethernet MAC with RGMII, 10/100M Ethernet PHY, one USB XHCI OTG 2.0 port, one USB3.0 and PCIe









Transform your TV into a smart hub of entertainment with our Android 9.0 TV Box. Here's why it's the ultimate companion for your home entertainment setup:

### 1. Android 9.0 Operating System:

Experience the latest features and optimizations with the Android 9.0 OS. Enjoy a smooth and responsive interface, enhanced security, and access to a vast array of apps, games, and content.

### 2. 4K Ultra HD Resolution:

Immerse yourself in stunning visuals with support for 4K Ultra HD resolution. Enjoy crisp details, vibrant colors, and lifelike images for an unparalleled viewing experience.

### 3. Powerful Hardware:

Equipped with powerful hardware, including quad-core processors, ample RAM, and expandable storage options, our Android TV Box delivers fast performance and smooth multitasking.

### 4. Seamless Streaming and Gaming:

Stream your favorite movies, TV shows, and videos in high definition without buffering or lag. Play Android games with ease and enjoy a responsive gaming experience.

## **5. Versatile Connectivity:**

Connectivity is key, and our Android TV Box offers versatile options. It includes HDMI, USB, Ethernet, Wi-Fi, Bluetooth, and more, allowing you to easily connect to your TV, sound system, peripherals, and network.

## **6. User-Friendly Interface:**

Navigate through apps, settings, and content effortlessly with the user-friendly interface of Android 9.0. Customize your home screen, access your favorite apps with ease, and discover new content recommendations.

## **7. Voice Control and Remote Support:**

Take control of your entertainment with voice commands. Our Android TV Box supports voice control features, making it easy to search, play, and navigate hands-free. It also comes with a remote control for traditional navigation.

## **8. Expandable Storage:**

Store your favorite apps, games, and media files with ease thanks to expandable storage options. Add a microSD card or connect external storage devices for additional space.

## **9. Regular Software Updates:**

Stay up to date with the latest features, security patches, and enhancements through regular software updates. Our Android TV Box ensures a continuously improved user experience.

## **10. Compact and Stylish Design:**

The compact and stylish design of our [Android TV Box](#) blends seamlessly with any home entertainment setup. Its sleek and modern look complements your TV and adds a touch of sophistication to your living space.

Elevate your home entertainment with the power and versatility of our Android 9.0 TV Box. Enjoy seamless streaming, gaming, and browsing on the big screen, all in stunning 4K Ultra HD resolution.