Amlogic A311D IPTV Set Top Box

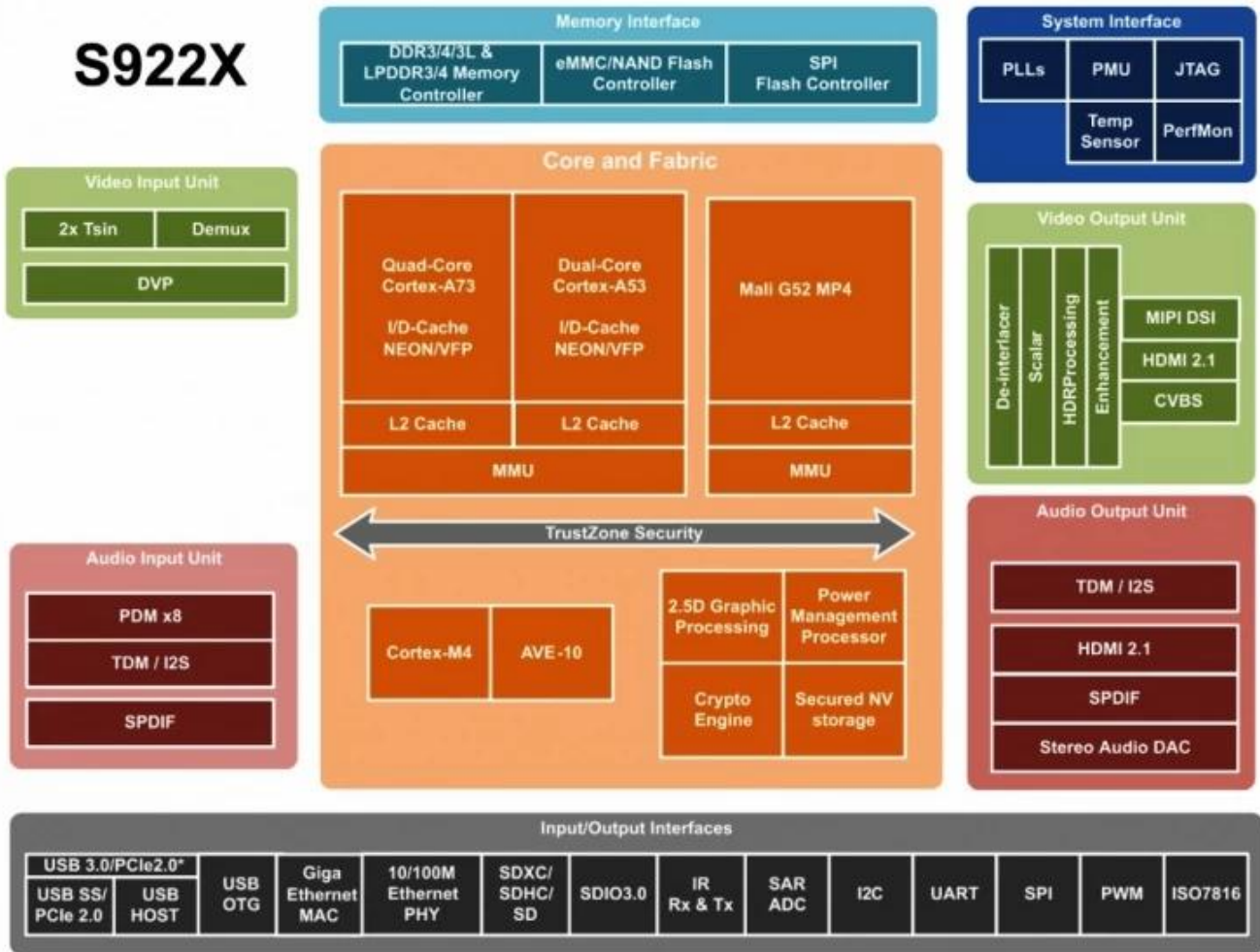| Specifications	
Model No.	Amlogic A311D IPTV Set Top Box
CPU	Amlogic A311D Quad Core ARM Cortex A73 and Dual Core ARM Cortex A53 1.98Ghz
GPU	ARM Mali-G52 MP4 (6EE) OpenGL ES 3.2, Vulkan 1.1 and OpenCL 2.0
RAM	DDR4 2GB/4GB
ROM	16GB eMMC (Expandable up to 128GB)
OS	Android 9.0
Video&Audio CODEC	
Decoding resolution	Support 4K H265 10Bit, H.264, AVS, MPEG-2 and many other formats
Multimedia Support	Support MPEG1, MPEG2, MPEG4, H.264, WMV, MKV, TS, flv and other video formats; Support MP3 and other audio formats; support JPG, JPEG, BMP, PNG, GIF and other photo formats
Port	
Video output	1 channel LVDS 40-pin 2.0mm double-pin, can support 8bit, 10bit screen; 1 channel HDMI output; 1 channel AV output
Video input	x1, MIPI CSI
Audio ouput	4-pin 2.5mm socket 25W@2 amplifier and 3W@2 speaker
Network interface	x1, 10M/100M Ethernet WIFI+BT, 2.4G single band or 2.4G/5G dual band for options PCIE slot (4G) x1 or M.2 slot (4G) x1 for options
USB2.0 interface	USB OTG x1 (available for HOST) USB HOST x7
Backlight interface	x2, 6-pin 2.0mm socket
Infrared interface	x1, 7-pin 2.0mm socket, supports both red and green LED indicators
Function expansion port	Serial ports x4
TF card slot	x1
SIM card slot	x1
RTC	Supports time synchronization
Power	
Power Supply	12V, 2.5DC Connector

S922X

Memory Interface
- DDR3/4/3L & LPDDR3/4 Memory Controller
- eMMC/NAND Flash Controller
- SPI Flash Controller

System Interface
- PLLs
- PMU
- JTAG
- Temp Sensor
- PerfMon

Video Input Unit
- 2x Tsin
- Demux
- DVP

Core and Fabric

Quad-Core Cortex-A73
I/D-Cache
NEON/VFP
L2 Cache

Dual-Core Cortex-A53
I/D-Cache
NEON/VFP
L2 Cache

MMU

Mali G52 MP4
L2 Cache
MMU

TrustZone Security

Cortex-M4 | AVE-10

2.5D Graphic Processing | Power Management Processor

Crypto Engine | Secured NV storage

Video Output Unit
- De-interlacer
- Scalar
- HDRProcessing
- Enhancement
- MIPI DSI
- HDMI 2.1
- CVBS

Audio Input Unit
- PDM x8
- TDM / I2S
- SPDIF

Audio Output Unit
- TDM / I2S
- HDMI 2.1
- SPDIF
- Stereo Audio DAC

Input/Output Interfaces

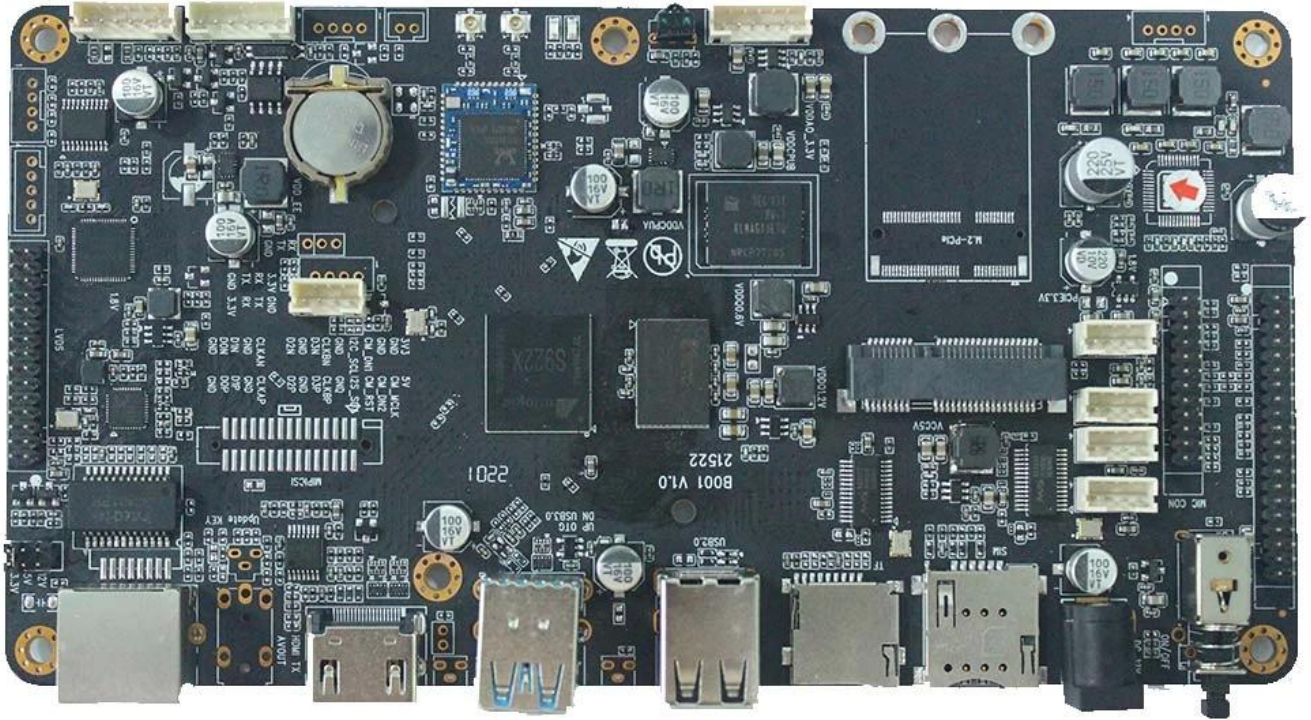| USB 3.0/PCIe2.0*		USB OTG	Giga Ethernet MAC	10/100M Ethernet PHY	SDXC/ SDHC/ SD	SDIO3.0	IR Rx & Tx	SAR ADC	I2C	UART	SPI	PWM	ISO7816
USB SS/ PCIe 2.0	USB HOST												

Supported configuration: PCIe2.0 port + USB2.0 Host, or USB3.0 without PCIe

S05ST01
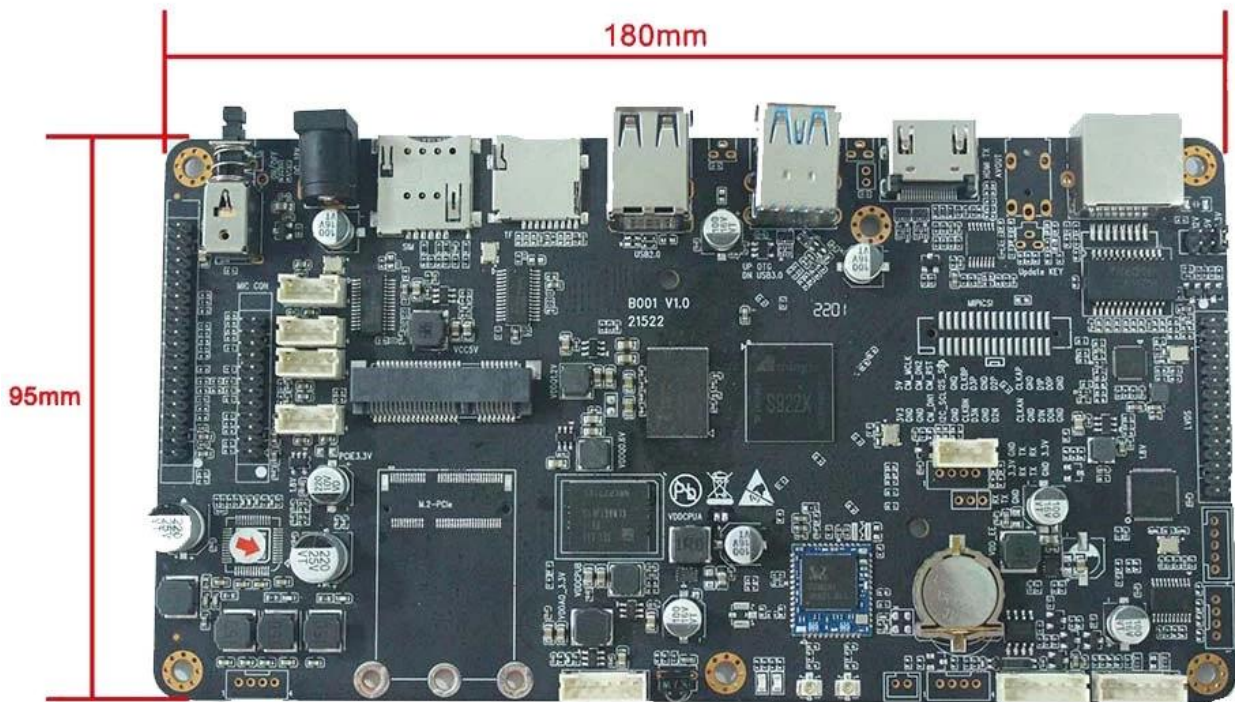
180mm

95mm

180mm*95mm*20mm

Amlogic S922X Android Dvelopment Board multimedia network player-LCD driver integrated board adopts Amlogic S922X 12nm high-end chip, which supports UHD 4K@60fps hardware video decoding. It also supports supports H.265 10-bit, H.264 and AVS+ and many other formats. Support HDR10 and HLG high dynamic range processing, with multi-channel UART and USB interfaces. Support Bluetooth, WIFI, 4G and Ethernet functions. Support AV serial use, SD card expansion. Perfectly supports all kinds of touch screens, suitable for high-performance intelligent display terminal equipment, industrial automation terminal, computer vision/algorithm, 3D experience, game/amusement equipment, high-performance face recognition computing/storage, AI intelligence, etc. It can be widely used as a high-end intelligent motherboard for various industries such as finance, advertising, security, transportation, and public transportation.

(1) With various interfaces
- 1 channel LVDS video output (40pins)
- 1 channel HDMI video output
- 5 channels USB2.0
- 4 channels RS232 (can be modified to USB2.0 by patch)
- 1 channel MIPI CSI
- 1 channel AV output
- 1 channel I2C
- I2SC/IS2B
- 1 channel 25W super power amplifier and 3W speaker interface

(2) Hybrid networking to break through network constraints
- Support wired, WiFi and 4G access, can realize multi-network hybrid networking
(3) Easy to operate & fast maintenance
- Support breakpoint playback
- Super multi-period timing switch function
- Support U disk loading or direct playback
- Support automatic repair, remote upgrade, intelligent domain name resolution

Chip Performance

CPU Sub-system
(1) Quad Core ARM Cortex-A73 and Dual Core ARM Cortex-A53 CPU
(2) ARMv8-A architecture with Neon and Crypto extensions
(3) Unified system L2 cache
(4) Build-in Cortex-M4 core for always on processing
(5) Advanced TrustZone security system
(6) Application based traffic optimization using internal QoS-based switching fabrics

3D Graphics Processing Unit
(1) ARM Mali-G52 MP4 (4ppc) GPU
(2) 8-wide warps, 2xdual texture pipe, 6x8-wide execution engines(EE)
(3) Concurrent multi-core processing
(4) OpenGL ES3.2, Vulkan 1.0 and OpenCL 2.0 support

Video/Picture CODEC
(1) Amlogic Video Engine (AVE) with dedicated hardware decoders and encoders
(2) Support multi-video decoder up to 4Kx2K@60fps+1x1080P@60fps
(3) Supports multiple "secured" video decoding sessions and simultaneous decoding and encoding
(4) Video/Picture Decoding
VP9 Profile-2 up to4Kx2K@60fps
   H.265 HEVCMP-10@L5.1upto 4Kx2K@60fps
   AVS2-P2 Profile up to 4Kx2K@60fps
H.264 AVCHP@L5.1upto 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 to1080P@60fps
   MPEG-2 MP/HL up to 1080P@60fps(ISO-13818)
MPEG-1MP/HLupto1080P@60fps(ISO-11172)
RealVideo 8/9/10 up to 1080P@60fps
Multiple language and multiple format sub-title videosupport
MJPEG and JPEG unlimited pixel resolution decoding(ISO/IEC-10918)
Supports JPEG thumbnail, scaling, rotation andtransition effects
Supports *.mkv,*.wmv,*.mpg, *.mpeg, *.dat, *.avi,*.mov, *.iso,*.mp4, *.rm and*.jpg file formats
(5) 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 lowlatency

Video Output

(1) Built-in HDMI 2.1 transmitter including both controller and PHY with CEC, Dynamic HDR and HDCP 2.2, 4Kx2K@60 max resolution output
(2) CVBS 480i/576i standard definition output
(3) Supports all standard SD/HD/FHD video output formats: 480i/p, 576i/p, 720p, 1080i/p and 4Kx2K
(4) 4-lane MIPI DSI interface, resolution up to 1920*1080 with rotation and panel calibration

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The **Amlogic A311D IPTV Set Top Box** is designed to deliver high-performance streaming and IPTV capabilities, making it a powerful addition to any home entertainment setup. Powered by the **Amlogic A311D Octa Core CPU**, this set top box offers lightning-fast performance and efficiency, ensuring smooth operation even with the most resource-demanding applications. Whether you're watching 8K Ultra HD content, gaming, or using IPTV services, the Amlogic A311D processor handles it all with ease.

The set top box supports **8K Ultra HD streaming**, providing crystal-clear visuals and stunning detail, making it the perfect choice for those who want a superior viewing experience. Thanks to **AI-powered upscaling**, lower-resolution content can be enhanced to near-8K quality, ensuring that you get the most out of any media you watch. AI technology also improves voice controls, allowing

for simple, hands-free operation to search for content, adjust settings, or control apps.

Running on **Android 9 OS**, this IPTV set top box gives you access to a wide variety of apps via the **Google Play Store**. Whether you're streaming from Netflix, YouTube, or IPTV platforms, playing Android games, or using productivity tools, the **Android 9** interface provides a smooth and intuitive experience. The OS is optimized for efficiency, better security, and improved app management, ensuring a fast, reliable user experience.

With **4GB of RAM**, the Amlogic A311D IPTV Set Top Box handles multitasking with ease, allowing you to switch between different apps and services without any lag. It also comes with **64GB of internal storage**, providing ample space for downloading and storing apps, movies, and games. If you require additional storage, the device supports **expandable memory** via an SD card, giving you the flexibility to store even more content.

Connectivity is one of the standout features of this device, with support for **Wi-Fi 6**. This ensures a stable and high-speed internet connection, allowing for buffer-free 8K streaming and fast downloads, even in environments with multiple connected devices. The box also supports **Bluetooth**, allowing for the easy pairing of external devices such as wireless keyboards, game controllers, and Bluetooth speakers, making it a versatile media hub.

The device is equipped with an **HDMI output**, ensuring high-definition audio and video output to any modern TV or display. The **USB ports** allow for the connection of external storage devices or accessories, giving you the ability to expand the functionality of the set top box as needed.

For IPTV enthusiasts, this set top box provides all the features you need for an immersive and versatile viewing experience. It supports popular IPTV apps and services, making it easy to watch live TV channels, on-demand content, and video-on-demand services with ease.

In conclusion, the **Amlogic A311D IPTV Set Top Box** is a feature-rich, high-performance device designed to elevate your home entertainment experience. With 8K Ultra HD streaming capabilities, AI-powered enhancements, Wi-Fi 6 support, and the Android 9 OS, this set top box delivers on every front. Whether you're streaming IPTV, gaming, or using it as a media player, the A311D set top box ensures a premium experience for all your entertainment needs.