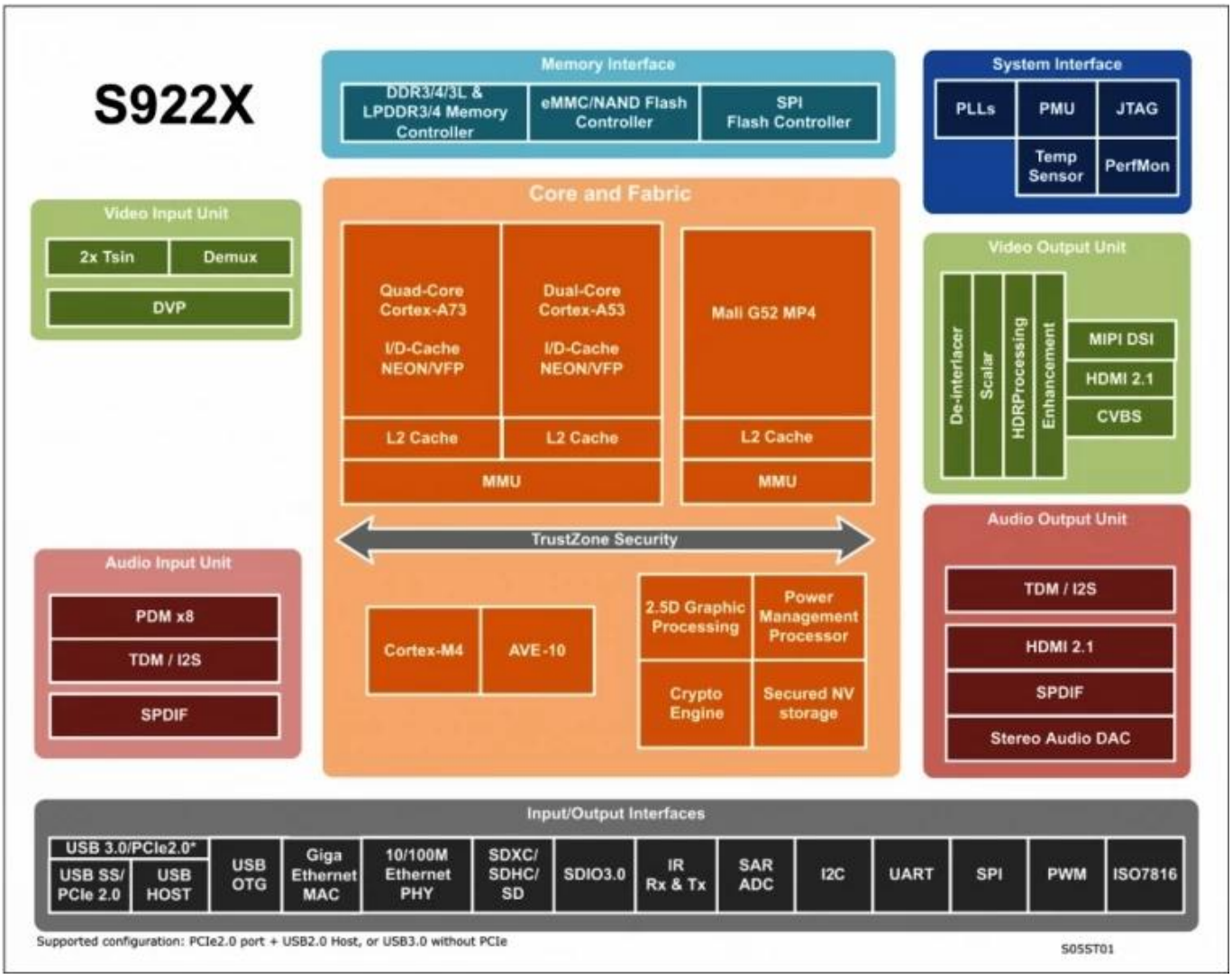
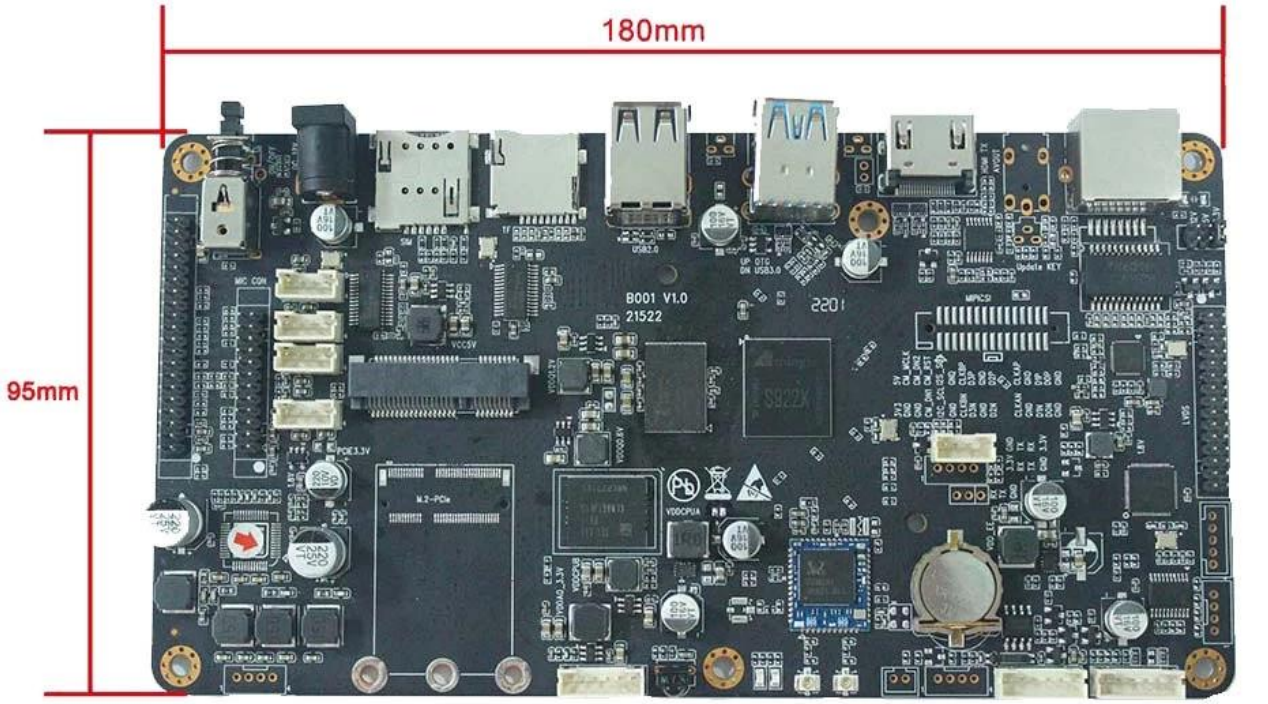
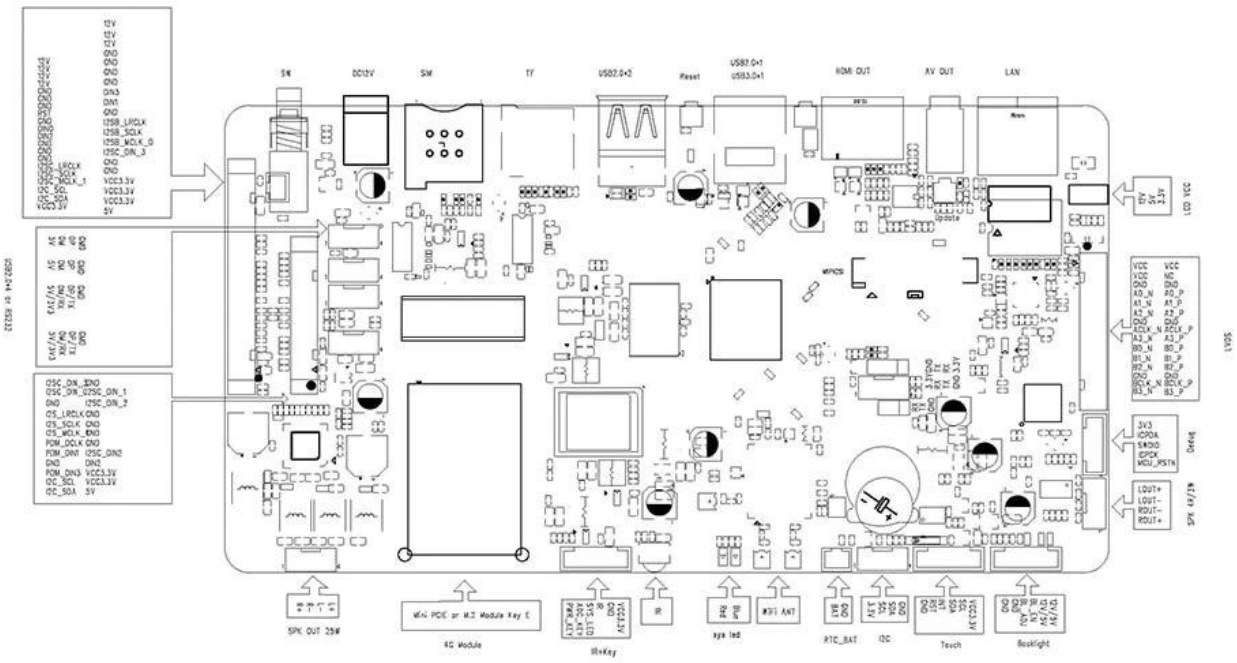
Amlogic S922X A311D A311D2 Android Dvelopment Board

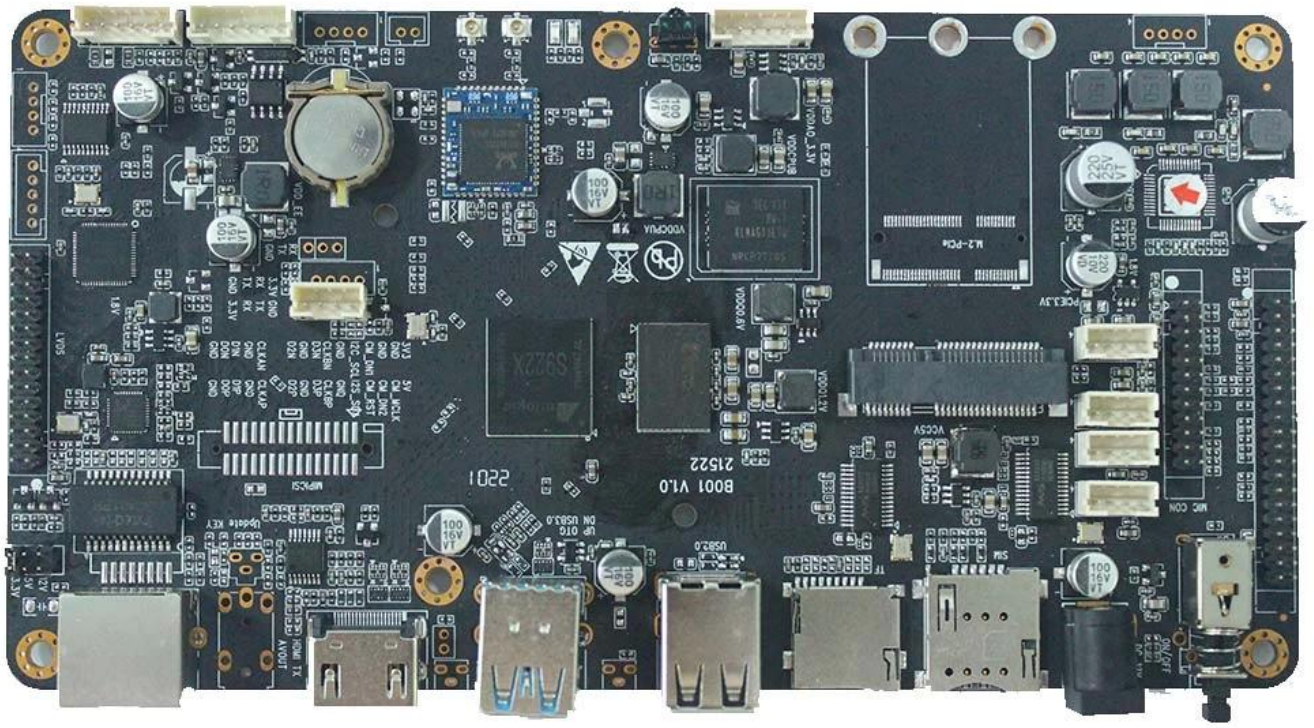
Specifications	
Model No.	Amlogic S922X A311D A311D2 Android Dvelopment Board
CPU	Amlogic S922X Quad Core ARM Cortex A73 and Dual Core ARM Cortex A53 1.98Ghz
GPU	ARM Mali-G52 MP4 (6EE) OpenGL ES 3.2, Vulkan 1.1 and OpenCL 2.0
RAM	DDR4 2GB/4GB
ROM	16GB eMMC (Expandable up to 128GB)
OS	Android 9.0
Video&Audio 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

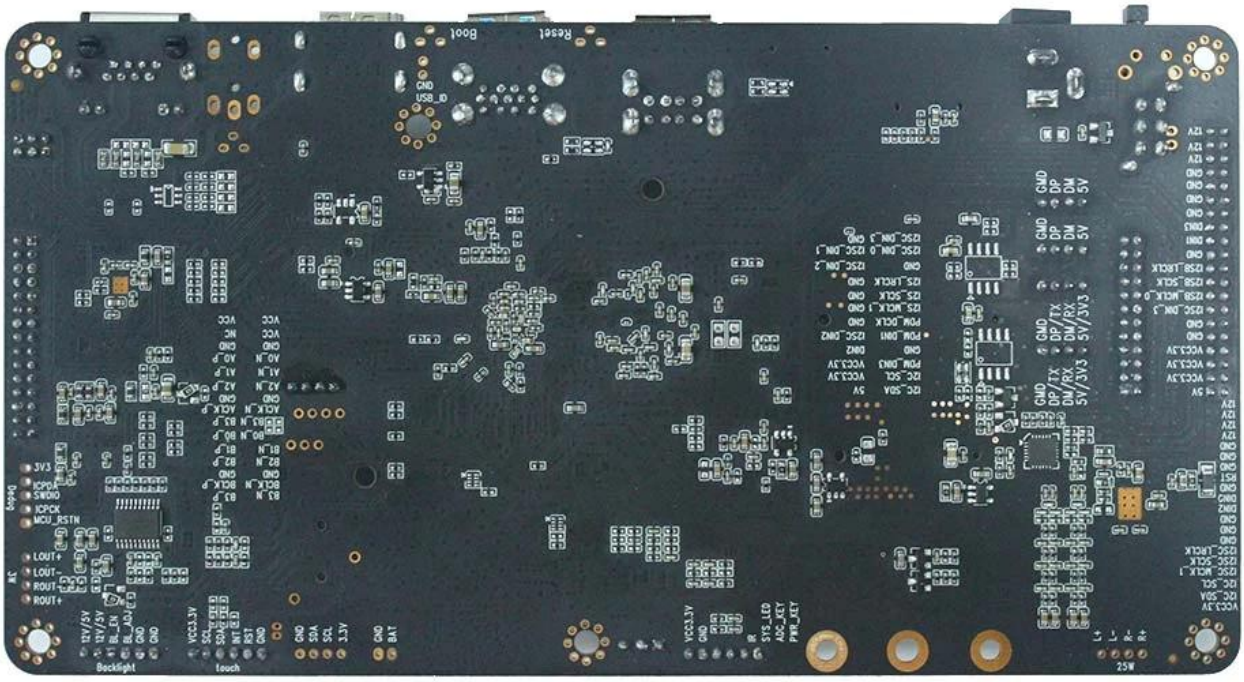

S922X
Memory Interface
DDR3/4/3L & LPDDR3/4 Memory Controller
eMMC/NAND Flash Controller
SPI Flash Controller
System Interface
PLLs
PMU
JTAG
Temp Sensor
PerfMon
Video Input Unit
2x Tsin
Demux
DVP
Core and Fabric
Quad-Core Cortex-A73
I/D-Cache NEON/VFP
Dual-Core Cortex-A53
I/D-Cache NEON/VFP
Mali G52 MP4
L2 Cache
L2 Cache
L2 Cache
MMU
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 SS/ PCIe 2.0
USB HOST
USB OTG
Giga Ethernet MAC
10/100M Ethernet PHY
SDXC/ SDHC/ SD
SDIO3.0
IR Rx & Tx
SAR ADC
I2C
UART
SPI
PWM
ISO7816
Supported configuration: PCIe2.0 port + USB2.0 Host, or USB3.0 without PCIe
S05ST01



180mm*95mm*20mm


SW
DC12V
SIM
TF
USB2.0×2
Reset
USB2.0×1
USB3.0×1
HDMI OUT
AV OUT
LAN
SPK OUT 25W
4G Module
IR+Key
sys led
RTC_BAT
I2C
Touch
Backlight





Board Introduction

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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Introducing the Amlogic S922X A311D A311D2 Android Development Board. This powerful and versatile board is designed for developers and enthusiasts. With its advanced features and robust performance, it offers endless possibilities for Android app development and customization. Experience the future of Android development with the Amlogic S922X A311D A311D2 Android Development Board.