S11 Video Encoder/Decoder Device

-- Low latency H.265/H.264 video encoder and decoder, full HD resolution, maximum 3840*2160P@30

-- Audio codec with audio input and output

-- Working as video encoder: HDMI input, Ethernet RTSP/TS stream output, TCP/UDP protocol

-- Working as video decoder: Ethernet RTSP/TS stream input (TCP/UDP protocol), HDMI output

-- Web UI or uart for management

-- S11 encoder paired with S11 decoder in low latency mode, the 1080P60 H.265 video latency is about 100ms

When S11 works as video encoder, it implements H.265/H.264 video encoding and audio codec, the stream will output via Ethernet after encoding. One channel uart data can also be packed with the stream and output to the Ethernet. The video encoding bitrates is controlled via control uart or web UI. S11 supports maximum 3840*2160P@30 video encoding, and is downward compatibility for 3840P25/ 1080P60 / 1080P50 / … video encoding.

When S11 works as video decoder, it implements H.265/H.264 video decoding and audio codec, the video stream input via Ethernet is decoded and sent to display via HDMI interface. The S11 decoder features a range of comprehensive signal outputs including HD video at 4K/1080P/720P, uart data, and analog audio is also supported. S11 also supports decoding maximum 4 channel 1080P videos at the same time and display via split screen mode(optional firmware). S11 includes DVR record functionality with USB disk. Additionally, the S11 supports a built-in RTSP sever that enables video streaming over Ethernet for remote software or hardware decoders.

Specification:

IO

HD video input	HDMI, type A connector.
HD video output	HDMI, type A connector.
Analog audio input / output	3PIN PH1.25mm connector.
Data uart	3PIN PH1.25mm connector, TTL 3.3V, baud rate adjustable.
Control-uart	4PIN PH1.25mm connector, TTL 3.3V
USB Host	4PIN PH1.25mm connector, for software upgrading and USB disk recording When works as video decoder.
Power in	XT30PW-M connector

Ethernet1	4PIN PH1.25mm connector.
Ethernet2	4PIN PH1.25mm connector.

Video and Audio

Video input / output	HDMI
Video formats	3840P30, 3840P25, 3840P24, 1080P60, 1080P50, 1080I60, 1080I50, 1080P30, 1080P25, 720P60, 720P50, 720P30, ······
Video encoding or decoding	H.265/H.264, setup via control uart or Web UI; Bitrates adjustable; Supports proprietary H.265/H.264 video compression only used p-frames for lowest latency(the S11 encoding plus S11 decoding latency is about 100ms for 1080P60 video) .
Audio input / output	Embedded HDMI or analog audio.
Audio Coding	AAC, 16bit, mono, 48Kbps
Encryption	AES256
Ethernet stream protocol	UDP TS stream, RTSP stream, UDP TS stream + RTSP stream

Monitoring and control
Comprehensive setup via web UI or AT command via control uart.

Temperature range
Full specification: 0° to +70°C Ambient (Optional: -40° to +85°C)
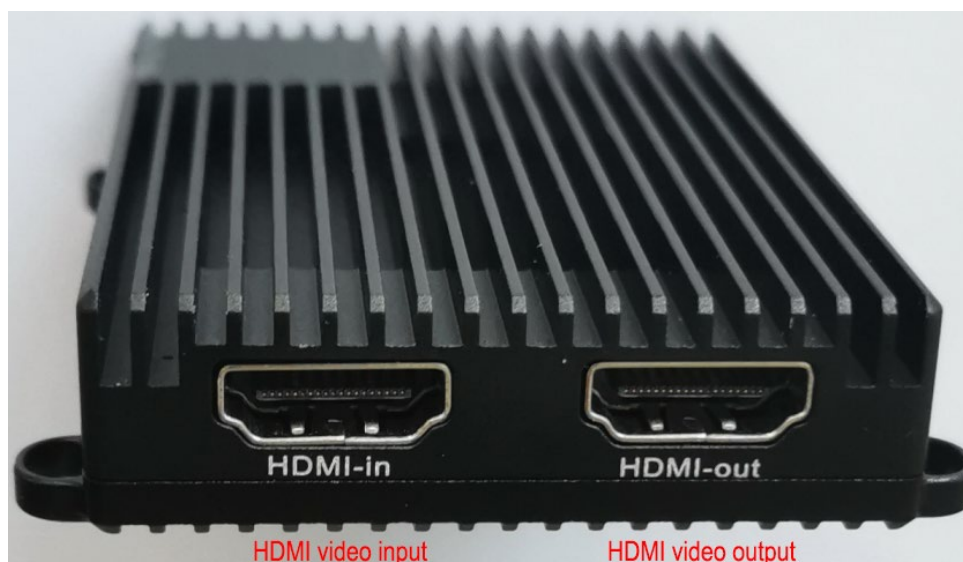Storage: –40° to +85°C

Physical Characteristics
Dimensions: 86.2*56*16.5mm
Weight: 94g

Power requirements
Input range: 7~30VDC
Power consumption: <250mA@12V

I/O signals:

Data uart
3PIN PH1.25mm connector.
The S11 supports one channel uart data packed with the stream and transmitted via the Ethernet. When S11 encoder works paired with S11 decoder and Ethernet linker (wireless or wire), the data to this uart will be

transferred to the remote S11 uart.

Control uart

4PIN PH1.25mm connector, TTL 3.3V. The S11 system can be set-up via this control uart with AT command. Normal working baud rate of the control uart is 9600.

Audio in and Audio out

3PIN PH1.25mm connector. When S11 encoder works paired with S11 decoder and Ethernet linker (wireless or wire), it supports bidirectional voice communication. The analog audio input can be line in or Mic in(setting via web UI), the analog audio out is designed to output to earphone or audio amplifier. The audio is AAC, 16 bit, mono, with a sampling rate of 48Kbps encoding.
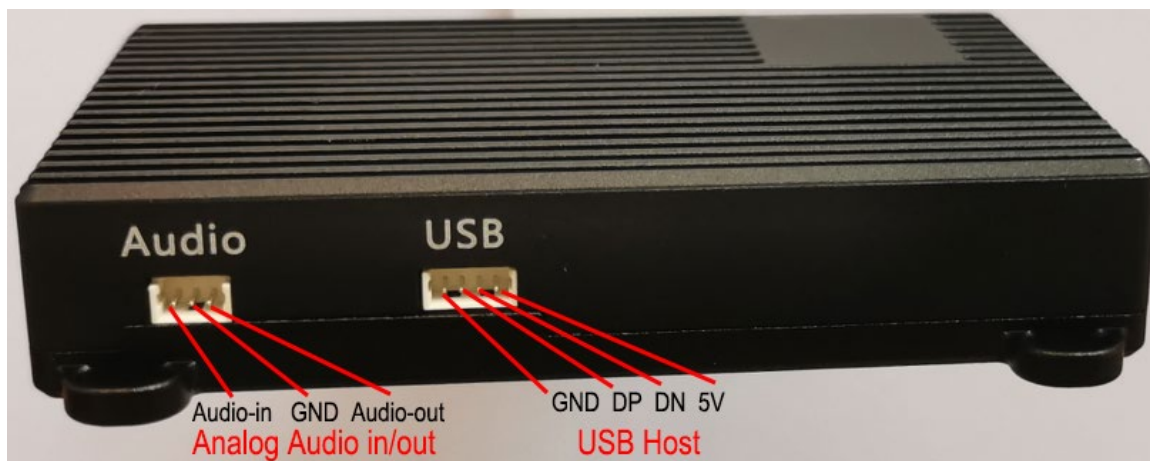

USB Host

4PIN PH1.25mm connector, we will provide a 4PIN-to-USB type A tiny converter.   Customers can plus in an external USB flash drive, and store videos during decoding.

Ethernet1 and Ethernet2

Two 4PIN PH1.25mm connector, 100M ethernet port.
Ethernet1 and Ethernet2 are internally set to bridge, with the same IP addresses for both network ports. The input or output of video data is through the Ethernet1 interface, and Web UI access is through the Ethernet2 interface; Ethernet1 supports connecting with Sihid bidirectional wireless transmission modules or other third-party bidirectional linkers. Ethernet1 supports UDP TS stream, RTSP stream and UDP TS stream + RTSP stream. The default IP address is 192.168.1.30 or 192.168.1.24 when shipped out.
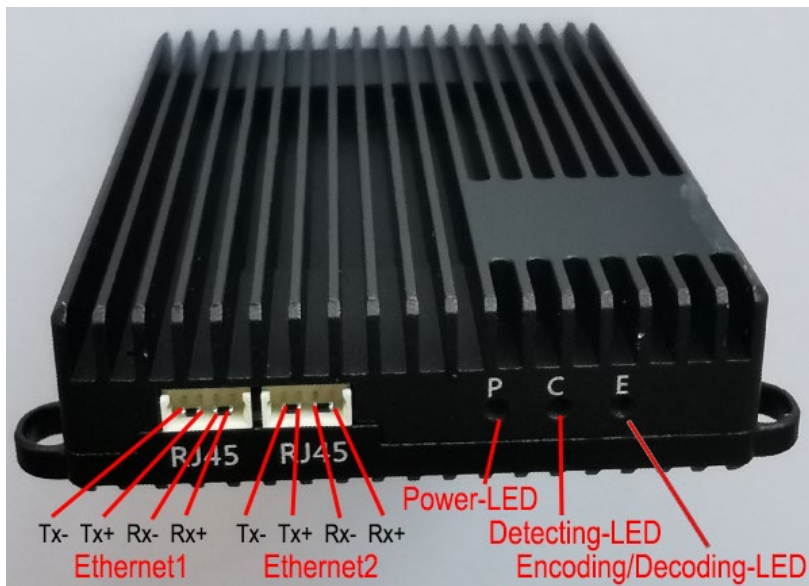
LEDs and GPIO

There are three signal indicator lights (P/C/E).

When the S11 works as encoding board, the corresponding signals of the indicator lights are as follows:

LEDs	Description
P	Power-LED: red color, constant light when the board is normal powered.
C	Green color, constant light when the input video is detected successfully, otherwise it will not light.
E	Encoding-LED: green color, blinks when video encoding normally.

When the S11 works as decoding board, the corresponding signals of the indicator lights are as follows:

LEDs	Description
P	Power-LED: red color, constant light when the board is normal powered.
C	Green color, constant light when video is being recorded with USB disk, otherwise it will not light.
E	Decoding-LED, green color, blinks when video stream is normal received and decoding

S11 Dimensions (mm)