4-Ch Multi-in-one Coaxial HD Decoding Chip

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XS9922A/B is a 4-channel analog composite video decoding chip that supports both HDcctv high-definition protocols and CVBS standard-definition protocols. XS9922A/B converts the received high-definition analog composite video signal through analog-to-digital conversion, video decoding, and 2D image processing into YCbCr format, which is then transmitted to the main control and encoding chip via the BT656 or MIPI CSI interface, enabling real-time preview and recording. XS9922A/B also supports coaxial transmission of audio data (under the HDCVI protocol) and control data, allowing audio/video signals and control data to be transmitted through a single coaxial cable. This simplifies wiring requirements and offers greater convenience during installation and debugging.

Additionally, XS9922A/B has an embedded audio codec that integrates support for 5-ch Line-In/3 Mic-In inputs and 1-ch Line-Out output. It supports a maximum sampling rate of 48K and a resolution of up to 24-bit, making it ideal for voice recording and intercom applications, thus simplifying product design.

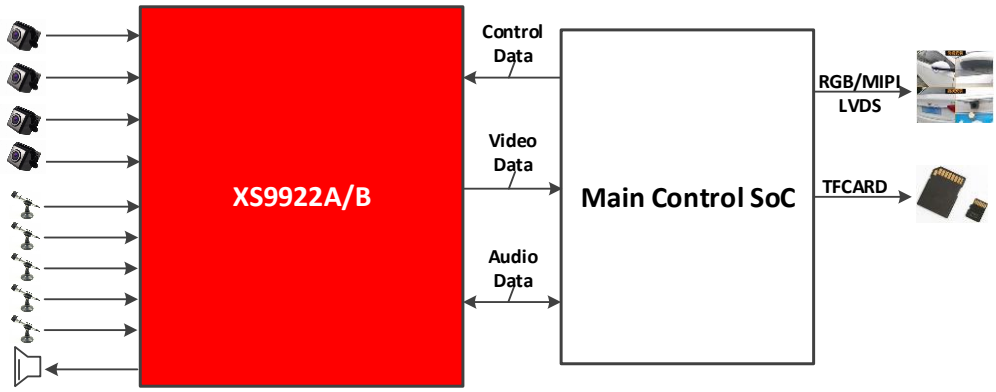
◎ Inventor of coaxial HD, with proprietary intellectual rights

◎ Tens of millions of units shipped

◎ Compatible with HDcctv standard

◎ Supports coaxial audio

◎ Outputs via MIPI or BT interface



General Functions

Video Input	
4 independent analog video input channels	Each channel supports HDcctv high-definition composite video signals
Each channel is compatible with standard-definition formats	Each channel is compatible with NTSC-MJ/4.43 and PAL-BGHID/CN/M/60
Video Output	
Flexible mapping between input and output channels	Supports scalable video formats
Analog Front-End	
4 independent analog front-end channels with AFE, EQ, and ADC	AFE supports adjustable channel bandwidth and input signal gain
EQ provides equalization compensation for signal attenuation over long-distance transmission	Supports both CPC and STC clamping methods
Composite Video Signal Decoding	
4 independent digital composite video signal decoders	Enhanced automatic format recognition and signal sync locking mechanism ensure quick signal locking
Supports AGC, ACC, White Peak, Y/C separation	Supports LTI and CTI
Supports brightness, saturation, contrast, hue, and sharpness adjustment	Supports high-quality HDCVI coaxial audio data parsing
Coaxial audio output sampling rates supported are 8 KHz and 16 KHz with 16-bit precision	Supports bidirectional data communication between camera and DVR
Audio Interface	
Integrated audio codec	Supports 5-ch Line In/3Mic In and 1-ch Line Out
Maximum sampling rate of 48K, with up to 24-bit precision	A set of cascade interfaces, supporting up to 4 chips for audio cascading
3 sets of standard IIS interfaces, configurable for master/slave mode	2 sets of IIS outputs for Recorder interfacing, and 1 for Playback input
Control Interface	
A set of standard IIC interfaces	Supports rate from 100 Kbit/s to 400 Kbit/s
Peripheral Features	
27 MHz crystal oscillator or crystal input	Integrated PLL to generate multiple working clocks for the chip

XS9922A/B Chips

Model	Supported Formats	Digital Output Interface	Operating Voltage	Packaging
XS9922A	960H@25/30, 720p@25/30/50/60, 1080p@25/30	BT656 × 2	3.3V 2.5V 1.8V 1.1V	QFP128 12 mm × 12 mm Pitch of 0.35 mm
XS9922B	960H@25/30, 720p@25/30/50/60, 1080p@25/30	MIPI 4Lane × 2, supports 4-ch HD/SD multiplexing	3.3V 2.5V 1.1V	QFN88 10 mm × 10 mm Pitch of 0.4 mm