

# TVI vs CVI vs AHD vs CVBS vs SDI Security Cameras

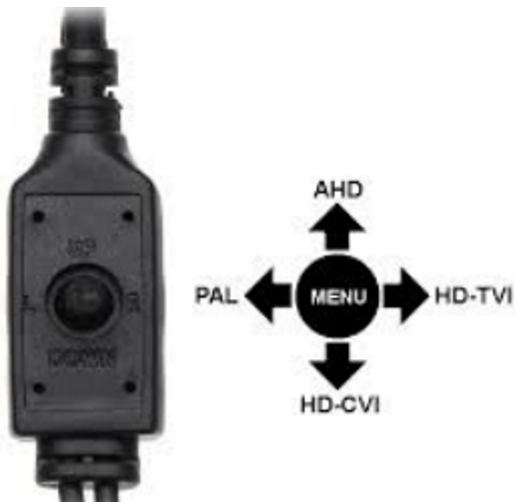
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Many customers get confused on the differences between the most popular analog video signals in the security camera market. The most popular are TVI, CVI, AHD, CVBS and SDI.

- CVBS is “composite video base band signal.” For the security camera market world, this is what is considered original analog standard definition video cameras. These analog security cameras are not high definition and are capped off at 960h, 700 analog TV lines resolution.
- SDI stands for “serial digital interface.” SDI is a standard used for the transmission of digital video signals over a coaxial cable. When CVBS video signals maxed out at 960h, engineers looked for alternative signal methods to transmit high definition video 1080p over coaxial cables. SDI technology has been in existence in the media TV market for a while. Security camera manufacturers started developing image sensors that would utilize SDI video transmission signals to get HD signals over coax. A problem was noticed when security camera cable runs would exceed 300 ft. SDI’s signal transmission was limited to max of 300 feet. While 300ft was sufficient for media TVI signal transmission, soon the industry came to realize that it was an insufficient distance and new technology needed to be developed.
- TVI is high definition “transport video interface.” It’s a transport technology that transmits high definition analog video over a coaxial cable. This standard was released in 2014 and has become the most popular analog HD security camera technology in the United States. TVI was first adopted by big manufacturing companies such as Hikvision.
- CVI is high definition “composite video interface.” Very similar to TVI but with a different digitized transmission signalling. CVI was adopted by the famous Chinese manufacturer Dahua. CVI is not a very popular option in the United States. TVI have controlled the security market in terms of HD analog security cameras. However, CVI is very popular in China.
- AHD stands for “Analog HD.” Similar technology to TVI and CVI in theory, but differs by video transmission signal digitization. AHD technology was adopted by Korean image sensor manufacturers such as Nextchip. AHD security cameras video transmission is popular in far east Asia such as Korea and Japan. Unfortunately, AHD did not pickup in the United States as much as TVI.

Since 2014, there has been a competition between manufacturers to select one specific analog security transmission technology and stick with it. At the end of the day TVI, CVI and AHD provide extremely similar image quality and features. All three technologies have very close prices as well. In 2017, CMOS image sensor manufacturers started embedding DSP’s in their image sensors that can support all-in-one or 4-in-1 (TVI,CVI,AHD,CVBS). Digital Video recorder manufacturers started following suit and manufactured DVRs that support all four analog signals.

Nowadays a buyer does not have to worry about what video signal to purchase as the majority of analog security cameras are supportive of all 4 HD video signals.



Toggle Joystick that come on analog camera to toggle which video signal to use  
All 4 video signals can support the following

- HD 2 MP, 4 MP, 5 MP, even 4k
- Transmit video up to 1600 feet
- Wide Dynamic Range
- Digital Noise Reduction
- Starlight low light night vision