



AVF 49x0B

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AVF 49x0B Advanced Audio/Video Front-End for PVR, DVD, and PC Applications

The AVF 49x0B analog video and audio decoder is a highly integrated device featuring 10-bit video processing and worldwide broadcast TV support. In addition to broadcast TV support, the AVF 49x0B also supports video sources such as composite video, S-Video, component video, and SCART video from consumer devices, such as VCRs, camcorders, DVD players, and set-top boxes.

By offering an optional 3-D comb filter for both NTSC and PAL standards, the AVF 49x0B achieves very high quality Y/C separation for composite video sources from TV tuners, as well as other legacy consumer devices. In addition, the AVF 49x0B provides audio/video synchronization which is critical for keeping lip sync.

The AVF 49x0B not only delivers superior video and audio quality for standard definition video. In addition, it supports enhanced definition video (up to 576p for Europe and up to 480p for US), thus allowing digitalization of popular progressive scan sources.

The AVF 49x0B provides an extensive set of features and functional integration.

The IC performs color decoding with optional 3-D comb filter and includes an independent sound IF decoder, an I²C interface, I²S digital audio support, and ITU 656 output capabilities. It provides automatic video standard detection for multistandard viewing environments and Macrovision detection for analog video content protection. It supports various data casting standards such as Closed Caption, WST (Teletext), CGMS-A, WSS, and VPS which are essential for all consumer devices supporting TV functions.

Main Features

- ◆ 10-bit processing for optimal video quality
- ◆ High-performance adaptive 2-D comb filter
- ◆ Optional 3-D comb filter for optimal Y/C separation of composite video sources in PAL and NTSC
- ◆ Integrated stereo audio support
- ◆ Audio/video synchronization
- ◆ EDTV support for resolutions up to 480p and 576p
- ◆ Low-power device with power management support via I²C commands and external pin

- ◆ Macrovision[®] 7.01 detection
- ◆ 1.2 V core supply, 3.3 V I/O
- ◆ Small footprint (9 mm×9 mm) for mobile designs

Interfaces

- ◆ 8/10-bit ITU-656 outputs
- ◆ I²S audio output
- ◆ SCART input
- ◆ Simultaneous inputs for
 - YP_bP_r
 - S-Video (Y/C)
 - Composite video
 - Sound IF (SIF)
 - Baseband stereo audio
- ◆ SDRAM interface for optional 3-D comb filter
- ◆ I²C slave interface
- ◆ JTAG

Packages

- ◆ PQFN64-1 (9 mm×9 mm)
- ◆ PMQFP128-2 (14 mm×20 mm)

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Video

- ◆ Video ADCs with clamping and AGC for non-standard video sources
- ◆ Flexible input architecture supports:
 - 8×CVBS
 - 2×YPrPb
 - 4×S-Video
 - 1×full-featured SCART with RGB, FB and CVBS
- ◆ Worldwide video standards:
 - NTSC-M, NTSC-443
 - PAL-BGDKHI, PAL-M, PAL-N, PAL-60
 - SECAM
- ◆ Optional Integrated 3-D comb filter for PAL and NTSC video standards
- ◆ European SCART support
- ◆ Component video inputs
- ◆ Raw VBI data streaming for software VBI decoding
- ◆ Multistandard VBI slicer
 - NABTS WST
 - CC (1x, 2x)
 - CGMS
 - VPS
 - WSS
- ◆ VBI full-field Closed Caption for data casting

Audio

- ◆ Worldwide sound IF demodulation
- ◆ Standard selection with single I²C transaction
- ◆ Baseband stereo audio input for SCART or other video sources
- ◆ Automatic standard detection of terrestrial broadcast audio
- ◆ Automatic sound selection (mono/stereo/bilingual)
- ◆ Automatic carrier mute function
- ◆ Automatic volume correction (AVC)
- ◆ French SECAM-AM audio support
- ◆ European FM stereo A2 audio support
- ◆ Korean FM stereo A2 audio support
- ◆ EIAJ Japanese broadcast audio support
- ◆ Worldwide Digital NICAM audio support
- ◆ BTSC and SAP audio support

- ◆ Alignment-free digital DBX noise reduction for BTSC stereo and SAP
- ◆ High-performance stereo separation for both BTSC stereo and EIAJ stereo audio
- ◆ Simultaneous demodulation of very high deviation FM-mono and NICAM signals
- ◆ FM radio support
- ◆ FM radio RDS data support

Typical Applications

- ◆ Analog/hybrid PC-TV cards
- ◆ Cable set-top boxes with analog/hybrid broadcast TV support
- ◆ DVD recorders
- ◆ Personal video recorders

AVF 49x0B IC Family

	3D Comb	Packages
AVF 4900B	Yes	PMQFP-128-2
AVF 4910B	No	PQFN-64-1, PMQFP-128-2

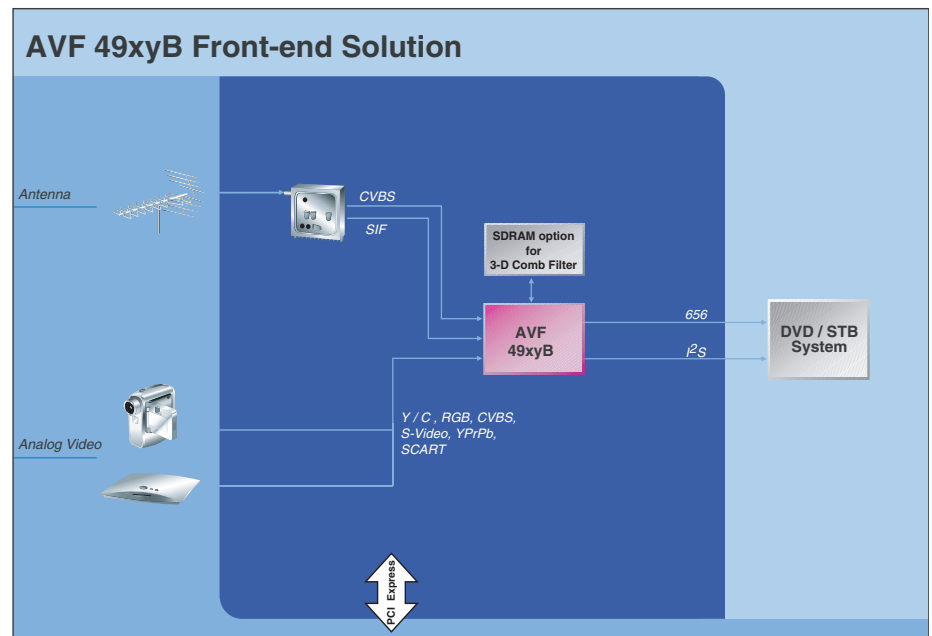


Fig. 1: Typical analog front-end solution for DVD recorders, STBs, or PVRs

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