

Agile Audio/Video Demodulator - Stereo Optional

AD-1 Series



○ Features & Benefits

- Stereo BTSC Outputs (Option 25)
- Rack Mountable - 1 EIA (1.75") Rack Space
- 250 kHz Tuning Increment - Supports Broadcast, CATV and UHF Assignments Including HRC & IRC
- AGC Circuitry Automatically Compensates for Input Level Variations
- 4.5 MHz Audio Subcarrier and Broadband Multiplex Audio Outputs

The AD-1 is a professional quality, agile audio/video demodulator. The unit provides audio and video outputs from any analog input channel in the 54 to 88 and 108 to 806 MHz frequency range. The AD-1 is ideal for signal monitoring and signal conditioning (audio/video processing and remodulation) applications. Agile channel selection permits on-the-fly channel changes.

The AD-1 takes a single NTSC channel in the 54 to 88 and 108 to 806 MHz frequency range and demodulates the audio and video information. Baseband audio and video as well as 4.5 MHz audio subcarrier and multiplex audio are provided as outputs. The AD-1 features phase locked loop synthesized frequency control with a tuning increment of 250 kHz. Channel selection is accomplished with the use of simple to use front panel accessible dip switches. A Nyquist filter provides stable, accurate demodulation of the vestigial sideband signal. Additionally, this filter minimizes distortion and preserves the timing of the signal. Delayed AGC circuitry automatically compensates for input signal variations. The AD-1 also utilizes a quasi-synchronous video detector that has low differential gain and minimal phase distortion. A quadrature audio detector delivers a very low distortion audio output. The broadband multiplex audio, 4.5 MHz audio subcarrier, or the optional BTSC stereo (L/R) or SAP outputs make the AD-1 ideal for any stereo application.

○ Specifications

RF

- Input Frequency Range
 - Standard: 54-88 & 108-806 MHz
 - Option 17: Sub-band Input: 7-49 MHz
- Channels: VHF, UHF (Input) CATV (STD,HRC,IRC)
- Tuning Increment: 250 kHz
- Input Level - Max: +20 dBmV
- Noise Figure
 - VHF: 8-11 dB
 - UHF: 10 dB
- Image Rejection - Min
 - VHF: 65 dB
 - UHF: 50 dB
- Input/Output Impedance: 75 Ohm

Video

- Frequency Response f_v+25 Hz to $f_v+4.0$ MHz:
 - Settable to ± 1.0 dB
- Output Level: 1.0 V p-p
- Differential Gain: 3.0 %
- Differential Phase: 1.5 °
- Group Delay Response: ± 50 ns
- Output Impedance: 75 Ohm
- Output Return Loss: 25 dB

Audio

Mono

- Baseband Frequency Response:
 - 50 Hz to 15 KHz: ± 0.75 dB
- Output Level: 500 mv RMS (Opt 29, 1.4 V RMS)
- Impedance: 600 Ohms, Unbalanced (STD) (Opt. 29, 600 Ohms, Balanced)
- Audio Signal-to-Noise: 57 dB
- Total Harmonic Distortion: 0.6%
- Multiplexed Frequency Response:
 - 50 Hz to 100 kHz: ± 0.2 dB
- Output Level: 500 mV RMS
- Impedance: 600, unbalanced Ohm

Stereo (Option 25)

- Baseband Frequency Response 50 Hz to 12 KHz (in-phase L/R inputs): ± 0.75 dB
- Output Level Left or Right: 4.0 Vp-p
- Impedance: 600 Ohms, Balanced
- Separation 50 Hz – 10 KHz: 20 dB
- Audio Signal-to-Noise: 60 dB

- Total Harmonic Distortion: <0.5%
- 4.5 MHz Subcarrier Output Level: +28 dBmV
- Impedance: 75 Ohm

General

- Power Requirements
 - Voltage: 117, $\pm 10\%$ VAC
 - Frequency: 60 Hz
 - Power: 16 W
- Fuse: 1/4 A
- Temperature Range: 0 to +50 °C

Mechanical

- Dimensions (WxHxD):
 - 19.0 x 1.75 x 14.5 in.
 - 483 x 44 x 368 mm
- Weight: 5.5 lbs., 2.50 kg

Connectors (Rear Panel)

- RF Input
 - Standard - VHF/UHF: "F" Type, Female
 - Option 17: Sub-band Input: "F" Type, Female
- Video Output: "F" Type, Female
- Baseband Audio Output:
 - RCA Phono, Female (STD)
 - Terminal Strip (Opt 25 + 29)
- Multiplexed (MPX) Audio Output:
 - RCA Phono, Female (STD Only)
- 4.5 MHz Subcarrier Audio Output:
 - "F" Type, Female
- Serial Data Input & Output
 - Option 20: Serial Input: RJ-12, Female

Controls (Front Panel)

- Frequency Selection: DIP Switches
- Video Response: Controls

Controls (Top Cover & Rear Panel)

- Sub-band Input Channels Option 17:
 - Slide Switch
- L/R or SAP Audio Output Option 15:
 - Contact Closure

Indicators (Front Panel)

- Power ON: LED, Green
- Stereo: LED, RED (Opt 25)

Refer to product instruction manual for additional specification measurements and notes.

○ Ordering Information

Model	Stock No.	Description
AD-1B	5932	Agile Audio/Video Demodulator 54-88/108-806 MHz
AD-1-OPT 17	59257	AD-1 Option: Sub-Band Input, 7-49 MHz
AD-1-OPT 20	59250	AD-1 Option: Digital Control, Serial RS-232
AD-1-OPT 09	59259	AD-1 Option: Balanced Audio, 600 Ohm
AD-1-OPT 25	59255	AD-1 Option: Stereo Audio Output, 600 Ohm Balanced