

AD-1 Series

Analog Agile Demodulator

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 Ω

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 Ω
 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 Ω, Unbalanced (STD)
 (Opt. 29, 600 Ω, 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 Ω, unbalanced
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 Ω, 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 Ω

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

RF Input
 Standard - VHF/UHF: "F" Female
 Option 17: Sub-band Input: "F" Female
 Video Output: "F" 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" Female
 Serial Data Input & Output:
 Option 20: Serial Input: RJ-12, Female

Controls

Frequency Selection: DIP Switches
 Video Response: Control
 Sub-band Input Channels Option 17:
 Slide Switch
 L/R or SAP Audio Output Option 15:
 Contact Closure

Indicators

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

Ordering Information

Model	Stock #	Description
AD-1B	5932	Agile Audio/Video Demodulator 54-88 MHz/108-806 MHz

Options

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 25	59255	AD-1 Option: Stereo Audio Output, 600 Ω Balanced
AD-1-OPT 29	59259	AD-1 Option: Balanced Audio, 600 Ω