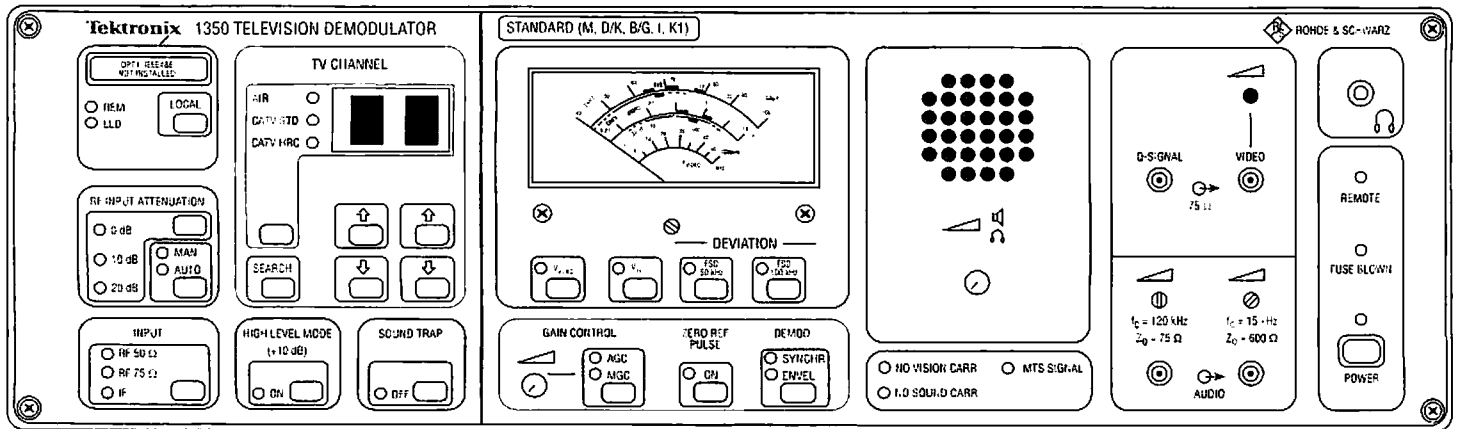


# 1350 Television Demodulator

1350  
Preliminary  
Information



1350 Television Demodulator.

- Continuously tunable over all TV bands and CATV channels (HRC & IRC) to 880 MHz (channels 2—99) with synthesizer precision for HRC and IRC
- Channel selection by digital entry of channel number, manual or remote modes, plus search
- Automatic compensation for carrier offsets to  $\pm 100$  kHz
- Switch selectable sound trap
- Switchable IF gain for improved S/N ratio
- Selectable envelope or synchronous detection
- Synchronous detector Q output for convenient adjustment of modulation balance and ICPM measurements
- Stable zero reference for video level adjustments and residual carrier measurements
- Built-in loudspeaker, headphone jack, and deviation meter
- Parallel remote control standard IEEE 488 bus interface optional
- User-friendly operation
- Available in standards M, D/K, B/G, I and K1
- Worldwide audio standards available: dual sound, NICAM prepared, or BTSC output

The Tektronix 1350 Television Demodulator provides an accurate link between RF signals and baseband measuring equipment. It captures and demodulates TV signals with true fidelity and full transparency, and is ideal for monitoring, testing, and adjustment applications in both TV transmitter and CATV systems.

Synthesizer frequency processing provides continuous coverage of all TV bands and cable channels. Channel selection is simply a matter of entering the channel number manually from the front panel or via the remote interface. A search mode facilitates automatic tuning. Accuracy is  $\leq 2.5$  kHz, and carrier offsets to  $\pm 100$  kHz are compensated automatically. Up to 20 dB of built-in RF attenuation is selectable, either manually or automatically. The RF input level is indicated on an analog meter, with the optimal input level marked directly on the meter. Highly effective adjacent channel suppression is provided by a saw filter.

The 1350 offers user-selectable envelope or synchronous detection. Two isolated video outputs and two Q signal outputs facilitate convenient measurement of incidental phase modulation of the video carrier to determine the intercarrier S/N ratio of the sound channel. The Q signal output is especially suited for adjustment of linearity and phase equalizing circuits in TV transmitters. A stable zero reference enables accurate measurement of the video modulation depth.

Frequency deviation of the sound carrier can be measured on the front panel analog meter. Narrow and wideband, mono and stereo BTSC audio outputs are available. Complex audio processing circuits maintain equal deviation of the two audio demodulators to ensure low stereo crosstalk. A built-in loud-speaker with volume control and a headphone jack provide means for conveniently monitoring the audio signal.

Parallel remote control capability is standard. IEEE 488 bus interface is optional.

The 1350 Television Demodulator will be orderable in the third quarter of 1994.

# 1350 Television Demodulator

## CHARACTERISTICS

Frequency Range	Bands I, II, III, IV/V, cable channels from 54 to 880 MHz to HRC or IRC, 38.9 and 45.75 MHz IF
Channel Selection	Manual or remote entry of channel number, automatic search, or IEEE-488 bus (optional)
Frequency Processing	Synthesizer
Frequency Error	≤2.5 kHz
Inputs	Type N female, 50 Ω
RF	BNC female, 50 and 75 Ωs
IF	BNC female
Input Voltage Range	
RF	0.15 to 30 mV or 0.5 to 100 mV, switchable
IF	5 to 100 mV
Return Loss	
IF	≥20 dB
50 Ω Rf	≥12 dB, ≤300 MHz; ≥10 dB, ≥300 MHz
75 Ω RF	≥8 dB
RF Input Attenuation	0/10/20 dB, automatic or manual adjustment
Noise Figure	≤9 dB, VHF; ≤12 dB UHF; 0 dB attenuation
Video S/N Ratio	≥60 dB, 3 mV input level; ≥64 dB, 10 mV input level and reduced IF gain
Video Channel Nonlinearity	≤2% differential gain, ≤±2° differential phase, 10 to 75% modulation depth, synchronous detection
Tilt (50 Hz)	≤0.5%
Gain Control	Automatic or manual, ≥34 dB dynamic range, typ. 40 dB, plus 2 x 10 dB input attenuation
Audio Channel	
Intercarrier Freq.	4.5 MHz
Intercarrier S/N	≥46 dB 0-4 MHz, sine modulation ≥52 dB without vision modulation
Freq. Response	≤±0.5 dB flatness, referred to 50 μs deemphasis
Harmonic Distortion	≤1%, typ. 0.5%, at ±50 kHz deviation and 5 kHz modulation frequency
Stereo Crosstalk	Down ≥36 dB
Channel Crosstalk	Down ≥70 dB

## OUTPUTS

Video In-Phase	1V p-p, CVS with standard modulation; 75 Ωs; BNC front and rear panel connectors
Video Quadrature	1 V p-p with standard modulation and 90° phase shift of switching carrier; 75 Ωs; BNC front and rear panel connectors
IF Output	200 mV rms ±3 dB; 50 Ωs; BNC rear panel connector
Audio	+6 dBm ±0.5 dB, with ±30 kHz deviation and 500 Hz modulation frequency

## INDICATIONS

Analog Meter	Input level with marking of optimal level range; deviation of sound (50 kHz and 100 kHz f <sub>sd</sub> ); marker for correct video output level
LEDs	Selected channel, no video carrier, no sound carrier, no pilot, and stereo

## ZERO REFERENCE PULSE

	For checking of residual carrier, field-repetitive, and can be enabled in lines 15 to 328 (factory-set) of field blanking interval or triggered by external pulse
Error	≤1.5% (synchronous detection)

## LOUDSPEAKER

	Front panel volume control
--	----------------------------

## POWER SUPPLY

	110/120/220/240 VAC ±10%, 47 - 63 Hz
--	---

## ENVIRONMENTAL

Rated	40° to 115° F (+5° to +46° C)
Operating	32° to 115° F (0° to +46° C)
Storage	-40° to 158° F (-40° to +70° C)

## PHYSICAL CHARACTERISTICS

Dimensions	mm	in
Height	147	5.7
Width	450	17.7
Depth	525	20.7
Weight	kg	lb
Net	16	36