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Find the *Tektronix DS1001A* at our website: ***Click HERE***

Television Demodulators

DS1000 Series



The Tektronix DS1000 Series Television Demodulators are the answer to cable operators, broadcasters and manufacturers that need a low-cost, high-performance demodulator. They support television standard M/N and B/G.

The DS1000 Series are full measurement-grade demodulators, with specifications better than demodulators twice their size. Input sensitivity and other specifications make the DS1000 Series ideal for use as a repeater or as the analog front end of an RF-to-digital conversion system in all-digital cable systems. It can also act as a precision set-top converter for making baseband measurements in the field.

The DS1000 Series are well suited for remote node monitoring. The addressable serial port allows remote control and status monitoring using computers and modems.

For a complete solution that includes a graphical display, the DS1000 Series can be combined with the 1740A Combination Waveform/Vector Monitor.

Features & Benefits

Standards Supported:
- M/N (DS1001A/DS1001G)
- B/G (DS1002)

Tuning Range:
- 55.25 to 801.25 MHz (M/N)
- 48.25 to 860.25 MHz (B/G)

Stereo Sound: BTSC, Dual Tone, NICAM (System Dependent)

Zero Carrier Pulse for Depth of Modulation Measurements

Standard and User-defined Channel Tables

RF Ghost Canceling Processing (DS1001G Only)

RS-232/RS-485 I/O Port for Remote Control

Simultaneous Left and Right and SAP Audio Output Monitoring

Remote Monitoring of RF Input Level

Lower Power Dissipation for Increased Efficiency and Reliability

Dual Video Outputs

IF Inputs and Outputs

Front Panel Lock-out Feature

Applications

Remote Node Monitoring

Operational Demodulation

Broadcast Demodulation

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Ghost Canceling

The DS1001G incorporates state-of-the-art ghost canceling technology which improves overall video quality by using a specialized ghost canceling test signal, pre-inserted into the television signal by broadcasters, to automatically null out annoying static or dynamic picture “ghosts” caused by RF signal reflections from large buildings, trucks or changing weather conditions.

Audio Support

Audio support includes BTSC stereo for system M/N (DS1001A) as well as both FM (mono & dual tone) and NICAM support for System B/G (DS1002). The DS1001A audio outputs are through special terminal-block connectors, which provide simultaneous outputs of Left, Right and SAP audio channels. The DS1002 audio output is through 2xLR connectors. These connectors can be configured in a variety of ways (depending on system), including: mono, SAP, stereo right and left, both right or both left. The DS1001A also has a 4.5 MHz intercarrier output for driving an external aural modulation monitor.

Remote Programming

The DS1000 Series supports remote programming via either RS-232 or RS-485 at 9600 baud. Most front-panel controls can be accessed via the port. The CSS50 software can automatically control the DS1000 Series, as well as a 2714/15 Spectrum Analyzer.

▶ Characteristics

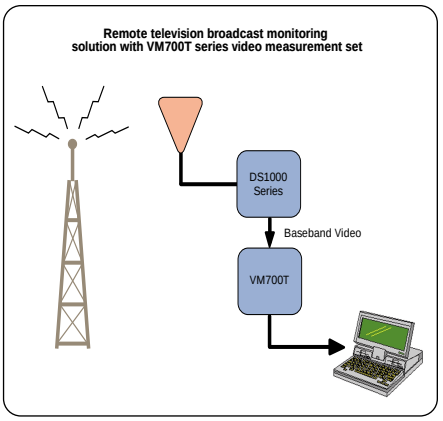
		DS1001A/DS1001G (M/N)	DS1002 (B/G)
RF Section	**RF Tuning Range**	**55.25 to 801.25 MHz (Under range to 53.75)**	**48.25 MHz to 860.25 MHz (Under range to 45.25 MHz)**
	RF Sensitivity*[1] (all)	0 to +30 dBmV, +60 to +90 dBµV	0 to +30 dBmV, +60 to +90 dBµV
	Return Loss (all)	>6 dB	>6 dB
	Input Impedance (all)	75 Ω	75 Ω
	Input Connector (all)	Female “F”	Female “F”
	Channel Tables (all)	User configurable	User configurable
IF Section	**Visual IF Frequency**	**45.75 MHz**	**38.9 MHz**
	Aural IF Frequency	41.25 MHz	33.4/33.16/33.05 MHz depending on sound system
	IF Output (all)	+51 dBmV/+111 dBµV (typical), BNC	+51 dBmV/+111 dBµV (typical), BNC
Quadrature Video Output	**BNC Connector**	**Yes**	**Yes**

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		DS1001A/DS1001G (M/N)	DS1002 (B/G)
Video Section	**Video Outputs**	**Two BNC connectors**	**Two BNC connectors**
	4.5 MHz Intercarrier Input and Output	Two BNC connectors	None
	Video Signal Output (all)	1 V_{p-p} baseband video (GCR 1 channel only)	1 V_{p-p} baseband video
	Video Signal-to-noise*[1]	>50 dB (NTC7-weighted)	>50 dB (unified-weighted)
	Frequency Response (18°C to 26°C)	±0.7 dB, 100 kHz to 3.58 MHz ±2 dB, 3.58 MHz to 4.1 MHz (typical)	±0.7 dB, 100 kHz to 4.43 MHz
	Group Delay Sound Trap Off	±50 ns, 100 kHz to 3.58 MHz	±60 ns, 100 kHz to 4.43 MHz
	Group Delay Reference Sound Trap On	FCC	Curve B
	Differential Gain (all)	<1.5% (<2.5% DS1001G typical)	<1.5%
	Differential Phase (all)	<1.5° typical (<2° DS1001G typical)	<1.5° typical
	Chroma/Luma Delay (all)	<40 ns	<40 ns
	Luminance Bar Amplitude (all)	<2%	<2% typical
	Luminance Bar Tilt (all)	<3% typical	<3% typical
	2T K-factor (all)	<2.5% (typical 1%)	<2.5% typical
	Line Time Distortion (all)	<3% typical	<3% typical
Audio Section	**Audio Outputs**	**Terminal-block connectors (simultaneous outputs of Left, Right, SAP)**	**2xLR configurable (Auto Switching FM or NICAM, Auto Switching for Mono, Dual Sound & Stereo)**
	Level (all)	0 dBm across 600 Ω	0 dBm across 600 Ω
	Frequency Response (all)	±0.5 dB, 50 Hz to 12 kHz (typical)	±0.5 dB, 50 Hz to 12 kHz (typical)
	THD (all)	<1% at 1 kHz*[2]	<1% at 1 kHz*[2]

*[1] Video signal to noise tested at +19 dBmV/+79 dBµV.

*[2] Audio THD tested with a blackburst video signal.



The DS1000 series television demodulator can be part of a total television monitoring system when coupled with a VM700T video measurement set.

Environmental

Temperature –
Operating: +5°C to +35°C.
Nonoperating: –20°C to +75°C.

Altitude –
Operating: 0 to 6,500 ft. (1981 m).
Nonoperating: 0 to 50,000 ft. (4572 m).

Power

Source Power –
Voltage Range: 95 to 240 VAC.
Line Frequency: 50/60 Hz.

Power Consumption – 30 VA maximum.

Physical Characteristics

Dimensions	**mm**	**in.**
Height	46	1.8
Width	206	8.1
Depth	440	17.3
Weight	**kg**	**lb.**
Net	2.2	4.8

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▶ Ordering Information

DS1001A

M/N Television Demodulator.

Includes: User's manual, power cord, special audio terminal block connectors.

DS1001G

M/N Ghost Canceling Television Demodulator.

Includes: User's manual, power cord, special audio terminal block connectors.

DS1002

B/G Television Demodulator.

Includes: User's manual, power cord.

International Power Cord Options

Opt. A1 – Universal Euro 220 V, 50 Hz.

Opt. A2 – UK 240 V, 50 Hz.

Opt. A3 – Australian 240 V, 50 Hz.

Opt. A4 – North American 240 V, 60 Hz.

Opt. A5 – Switzerland 220 V, 50 Hz.

Service Options

Opt. R3 – Repair warranty extended to cover 3 years.

Recommended Accessories

TVGF11A – Rackmount single DS1000 series in a 483 mm (19 in.) rack.

TVGF13 – Rackmount two half-rack instruments side-by-side in a 483 mm (19 in.) rack.

TVGF14 – Rackmount two half-rack instruments vertically in a 19 in. rack (use to combine DS1000 Series with a 1700 series monitor).

TVGF14 and 1700F02 – Portable case for two half-rack instruments.

Measurement Service Options

Contact your local Tektronix representative.

Contact Tektronix:

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