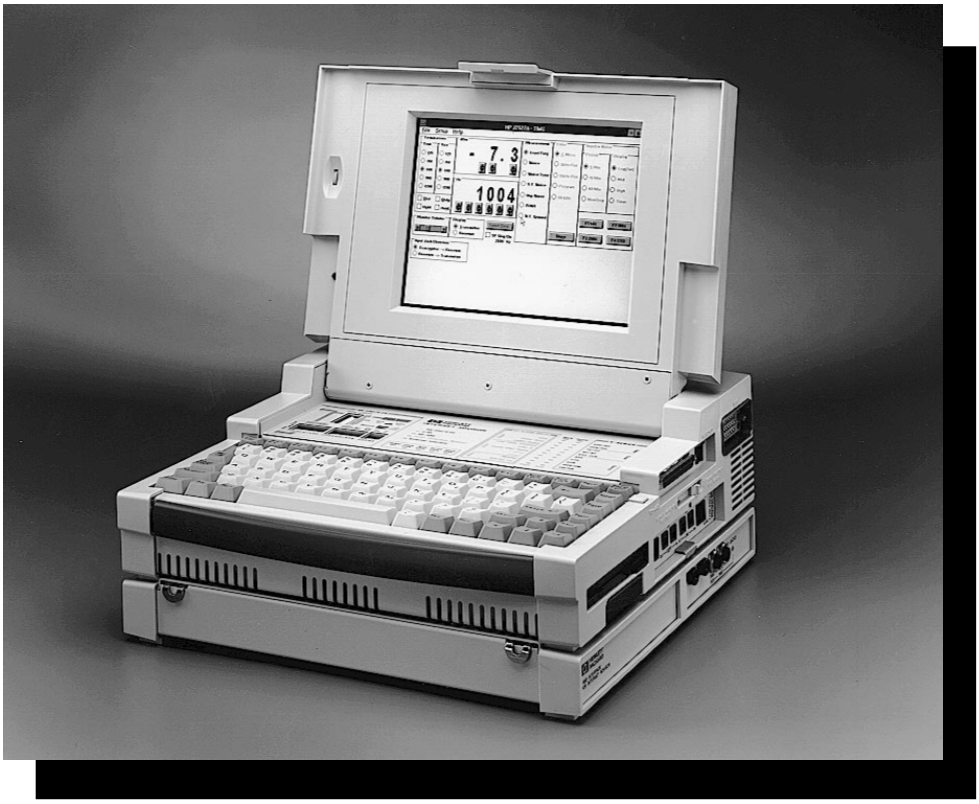
HEWLETT PACKARD

HP J2527A
Transmission Impairment Measurement Set

Add TIMS Testing to the
HP Internet Advisor



HP J2527A Add TIMS Testing to the HP Internet Advisor

A new Transmission Impairment Measuring Set -- Continuing the Hewlett-Packard tradition of excellence

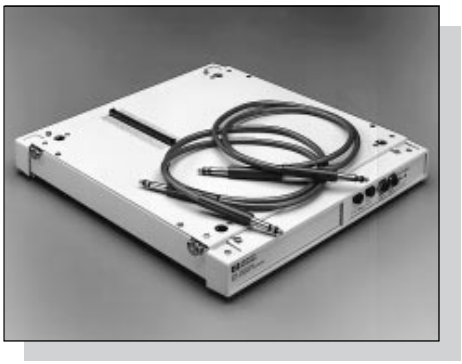
The HP J2527A TIMS interface for the HP Internet Advisor provides basic analog tests to qualify circuits for voice, data, broadcasts and ISDN. Operation of the HP J2527A is based on the industry standard family of HP TIMS products: HP 4934A, HP 4935A and HP 4936A.

When the HP J2527A TIMS interface is attached to the HP J2300 Series Internet Advisor using an undercradle, the datacom specialist has full decoding of LAN and WAN protocols, bit error rate measurements and transmission impairment measurements -- all under one handle.

The HP J2527A TIMS interface includes the following features:

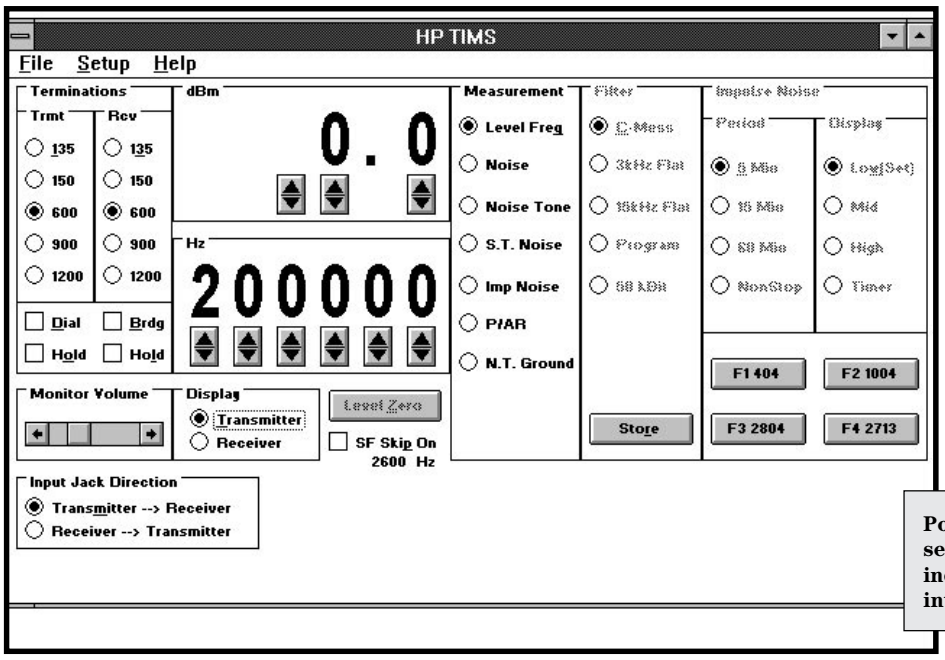
- 50 Hz to 200 kHz operation
- Level/frequency
- Noise and noise-to-ground
- Noise-with-tone and signal-to-noise
- 3-level impulse noise
- P/AR
- IEEE 743-1984 and CCITT compliance
- Microsoft Windows® user interface based upon operation of the HP 4934A, HP 4935A and HP 4936A
- Easy to use interface. Selections not appropriate to the designated measurement are grayed-out to avoid inadvertent errors.

** Microsoft is a U.S. registered trademark of Microsoft Corp.*



The HP J2527A includes WECO 310 cables, operating manual, and software.

The HP J2527A easily attaches to the HP Internet Advisor. The entire assembly can be placed in an optional carring case.



Point and click selections with industry standard interface.

Specifications

Except where otherwise stated, the following parameters are warranted performance specifications. Parameters described as "typical" or "normal" are supplemental characteristics which provide a useful indication of typical, but non-warranted, performance characteristics.

Measurement methods meet IEEE Std 743-1984

Transmitter Frequency

Range	Resolution	Accuracy
50 to 99999 Hz	1 Hz	+/- 50 ppm
100 to 200 kHz	10 Hz	+/-120 ppm

Additonal Transmitter Functions

SF Skip: Transmitter skips 2600 +/- 150 Hz.
Four Pre-set Frequencies: Normally 404, 1004, 2804 and 2713 Hz.
User can temporarily change these and the SF Skip center frequency.

Receiver Frequency

Range	Resolution	Accuracy
50 to 9999 Hz	1 Hz	+/- 1Hz
10 to 200 kHz	10Hz	+/- 10Hz

Transmitter Level

Range: -40 to +13 dBm.
Resolution: 0.1 dB.
Accuracy at 1004 Hz, 0 to -19 dBm: Typically +/-0.1 dB.

Flatness (dB relative to 1004 Hz):

Level (dBm)	Frequency (Hz)					
	20	200	15k	60k	85k	200k
+10 to +13	+1 -2.5*	+/- 0.2*	+/- 0.5*	+/- 0.7*	+/1.5*	
- 40 to +10	+/- 1.0	+/- 0.2	+/- 0.5	+/- 0.5		+/- 1.5*

**Typical*

Distortion (dB down from fundamentals)

Level (dBm)	Frequency (Hz)			
	50	100	4k	200k
+ 10 to +13	20 typ	45typ	45 typ	
0 to + 10	20 typ	55	45	
- 30 to 0	40 typ	50	40	
- 40 to - 30	40	50	35 typ	

At 1004 Hz, 0 dBm: THD typically > 62 dB down from fundamental.

Receiver Level

Range: - 50 to + 13 dBm.
Resolution: 0.1 dB.
Detector Type: Average.

Accuracy (dB):

Level (dBm)	Frequency (Hz)					
	50	200	15k	60k	85k	200k
+ 13 to -40	+/- 0.5	+/- 0.2	+/- 0.5	+/- 0.5	+/- 2.0*	
- 40 to - 60	+/- 0.6*	+/- 0.4*	+/- 0.8*	+/- 1.0*		+/-2.0*

**Typical*

At 1004 Hz, - 20 to + 13 dBm: +/- 0.1 dB.
Receiver accuracy is specified from 500 Hz when using the 135 or 150Ω terminations.

Message Circuit Noise

RECEIVER (Transmitter: off and terminated).
Range: 10 to 100 dBrn (135 & 150Ω: 17 to 100 dBrn).
Resolution: 1 dB.
Detector Type: Quasi-RMS.
Accuracy: +/-1 dB from 10 to 100 dBrn
Filters: C-Message, 3 kHz Flat, 15 kHz Flat, Program , 50 kbit

Noise-with-Tone

RECEIVER (Transmitter: 1004 Hz tone).
Notch Filter: > 50 dB rejection from 995 to 1025 Hz.
Range: (at 600, 900 and 1200Ω): 10 to 100 dBrn.
Resolution: 1 dB.
Accuracy: +/- 1 dB from 20 to 100 dBrn, +/- 3 dB from 10 to 20 Brn
Detector Types: Quasi-RMS

Signal-to-Noise Ratio

RECEIVER (Transmitter: 1004 Hz tone).
Signal Level Range (600, 900 and 1200Ω): - 40 to + 13 dBm.
Ratio Range: 10 to 45 dB.
Ratio Resolution: 1 dB.
Accuracy (signal -30 to + 10 dBm), S/N 10 to 40 dB: +/- 1 dB; S/N 40 to 45 dB: +/- 2 dB.
Detector Types (noise): Quasi-RMS; (tone): Average.

3-Level Impulse Noise

TRANSMITTER C-Msg or 3 kHz Flat receive filter selected: 1004 Hz tone. Any other receive filter: off and terminated.
RECEIVER
Level Range: - 40 to + 13 dB.
Notch Filter: > 50 dB rejection from 995 to 1025 Hz.
Threshold Ranges (at 600Ω): Low 30 to 100 dBrn, Mid and High 4 and 8 dB higher respectively, up to 100 dBrn.
Threshold Accuracy: +/- 1 dB over the following ranges: with C-Msg or 3 kHz Flat **filter:** 40 to 100 dBrn; with Program **filter:** 60 to 100 dBrn.
Loss of Holding tone: "-" sign in right display, latching.
Count Timer: Nominally 5, 15, 60 minutes or non-stop.
Count Range: 0 to 9999.
Max Count Rate: Nominally 8 per second.

Noise-to-Ground

RECEIVER (Transmitter: off and terminated).
Range: (at 600, 900 and 1200Ω): 50 to 120 dBrn.
Resolution: 1 dB.
Accuracy: +/- 1.5 dB.
Filters & Detector: See message circuit noise.

P/AR

TRANSMITTER
Signal: 16 frequencies in range 140 to 3890 Hz.
Level Range: - 40 to 0 dBm.
Resolution: 1 dB.
RECEIVER
P/AR Range: 0 to 120 units, otherwise +/- 4 units
Resolution: 1 unit.
Accuracy (30 to 110 units): +/- 2 units.
Level Range: - 40 to + 0 dBm (135 & 150Ω: - 30 to + 0 dBm)
Resolution: 1 dB.

General

Maximum DC Blocking: 200V nominal.
Impedances: Nominally 135, 150, 600, 900 and 1200Ω. Transmit and receive impedances are independently selectable.
Receiver Return Loss (600, 900 and 1200Ω: 50 Hz to 4 kHz): typically > 30 dB.
Bridging Loss (up to 20 kHz): Typically < 0.2 dB.
Longitudinal Balance: (typical) > 80 dB at 60 Hz, > 70 dB at 540 Hz, > 60 dB up to 4 kHz, decreasing at 6 dB per octave up to 20 kHz.

Hold Circuits: 2, each drawing 24 mA nominal.
AC Power Requirement: Nominally 100 to 240 V RMS, 50 to 60 Hz, 20VA max.
Temperature Range
Operating: 5° C to + 40° C
Storage: - 25° C to + 60° C
Weight 7.8 kg (with HP J2301A)
Dimensions
12.2H x 30W x 29D cm
4.9H x 12W x 11.5D in
(with HP J2301A)

Industry standard measurements of the HP 4934A are built into HP J2527A.

Ordering Information

HP J2527A Transmission Impairment Measuring Set includes connector for mating with the J2300/01/02A, two WECO 310 test cords and Operating Manual.

Options
2 years additional hardware service: For 2-year extended hardware support beyond the standard 1-year return-to-bench warranty, order Option W30.

CLEI for Bell Operating Companies: For Bellcore Common Language Equipment Identification (CLEI) labeling, order Option 1A3.

Option summary

Option	Description
001	Replaces North American Features and Connectors with CCITT; 820/1020 Hz Holding Tone: Deletes Test Cords
W30	2 years additional hardware service
1A3	Bellcore CLEI compliance

Accessories for the HP J2527A

1.5m (60-inch) test cord with 310 male connector and alligator clips	HP 18182A
Soft vinyl carrying case with carrying handle, shoulder strap and extra space for manuals, test cords etc	HP J2305A

Hewlett-Packard manufactures the HP J2527A under a quality system approved to the International Standard ISO 9002 (BSI Registration Certificate No. FM 24426).

HP Sales and Support Offices
For more information on Hewlett-Packard Test and Measurement products, applications or services please call your local Hewlett-Packard sales offices. A current listing is available via Web through AccessHP at http://www.hp.com. If you do not have access to the internet please contact one of the HP centers listed below and they will direct you to your nearest HP representative.

United States:
Hewlett-Packard Company
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5301 Stevens Creek Boulevard
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Santa Clara, CA 95052-8059
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