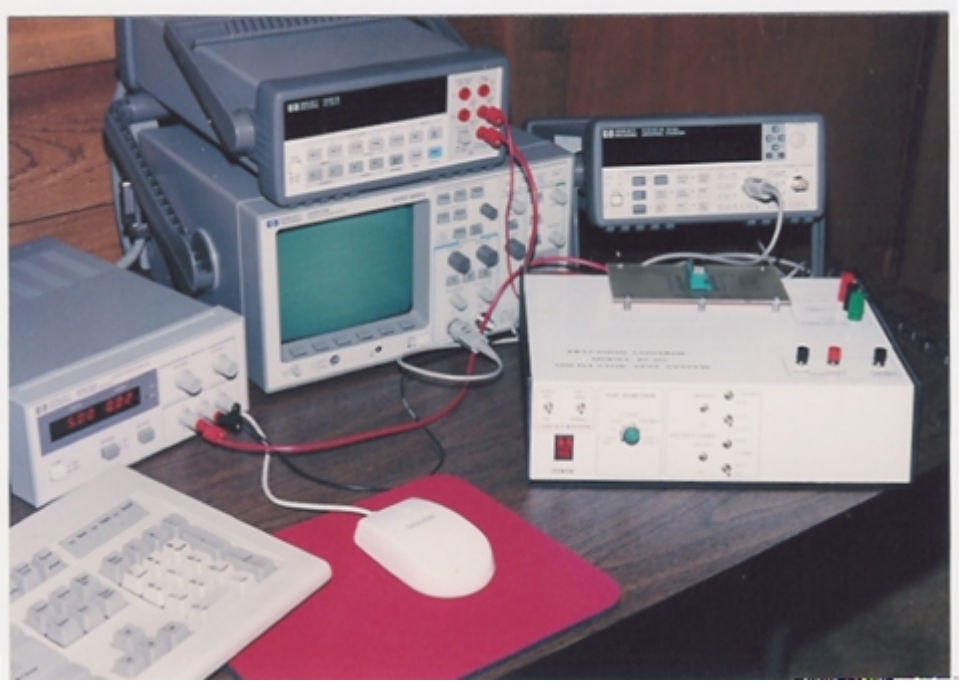
PRECISION CONTROL
719 W. ELM ST, PALMYRA, PA, U.S.A 17078-3029
TEL: 717-832-2000, FAX: 717-832-0238, Equipment Sales: 239-481-1046
E-mail: sales@precision-control.com Web-site: http://www.precision-control.com

MODEL PC301
OSCILLATOR PARAMETER TEST SYSTEM

The PC301 is designed to satisfy the testing requirement for both Engineering and Production. Combined with a digitized oscilloscope, frequency counter, external power supply and multimeter, most specified oscillator parameters can be measured and analyzed. The PC301 is an excellent system for parameter measurements when there is a need for Engineering evaluation, oscillator setup, or trouble shooting.



FEATURES

* Both thru-hole and surface mountable oscillator (with optional adapter) can be tested.
* Frequency pushing and pulling performance evaluation.
* Shock starting and slow starting test at any input voltage.
* Computer controlled visual and hard copy oscilloscope readout of the wave form showing rise/fall times, duty cycle, output levels and overshoot.
* Automatic input control voltage function for testing of VCXO frequency deviation.
* TTL, CMOS, Positive and Negative ECL, and Sine wave fixed frequency and voltage controlled oscillators can be tested and evaluated.

PRECISION CONTROL

FEATURES

* Enable/Disable oscillator function testing.
* Computer generated frequency drift measurements to determine short-term stability.
* Computer and manual control of the multimeter, oscilloscope and the frequency counter for off-line tests and analysis.
* A computer generated test data form of the units tested.
* The data formatted for use with popular spreadsheet programs for further analysis.

SPECIFICATIONS

NUMBER OF TEST POSITIONS:	1 unit is tested at a time.
FREQUENCY RANGE:	1 Hz to 160 MHz.
STYLE OF UNIT ACCEPTABLE:	Thru-Hole: full size DIP and half size DIP; Surface Mount Devices with optional adapter. Odd size and stand-alone oscillators are acceptable with special adapters.
TYPE OF UNIT ACCEPTABLE:	Fixed Frequency (XO), Voltage Controlled (VCXO), Temperature Compensated (TCXO), and Oven Controlled (OCXO)
OUTPUT LOADS AVAILABLE:	Manually set: 1 TTL, 10 TTL, 15 pf, 50 pf, Positive ECL, Negative ECL, 50 ohms, and open.
TEST CONFIGURATION:	Manual and computer control Positive or Negative External Power Supply Voltage. Manual Pin 1 open or normal function testing. Manual Test Function Switch Positive power supply, logic and sine output Negative power supply, logic and sine output Positive power supply, complementary output (one output measured) with pin 7 grounded Negative power supply, complementary output (one output measured) with pin 7 grounded Negative power supply, complementary output (one output measured) with pin 14 grounded Negative power supply, logic output with pin 14 grounded Enable/Disable

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TEST FUNCTIONS:	Manual and computer control of Enable/Disable function. Manual Shock and Slow starting. Manual and computer control of the external power supplies to test and evaluate VCXO frequency deviation. Manual and computer control for power supply frequency pushing. Manual and computer control of the Oscilloscope, Frequency Counter, and Multimeter.
EXTERNAL CONNECTIONS:	Devices: input current meter, input voltage meter, VCXO control voltage meter, oscilloscope probe, frequency counter probe, external power supply, external VCXO control power supply.
OUTPUTS AVAILABLE:	Internal +5 V.D.C. Power Supply voltage, External VCXO Supply voltage, each of 14 pins of the unit under test, A.C. voltage to power an External Power Supply.
INPUT VOLTAGE REQUIRED:	105 to 132 V.A.C., 47-63 Hz. Inputs of 100, 220, 230, and 240 V.A.C. for international operation are available.

REMOTE COMPUTER CONTROL HARDWARE AND SOFTWARE:

FEATURES:

* Operates in Microsoft Windows environment, mouse driven, point and click software.
* Customer name, Part No., Description, Reference No., frequency of oscillator, frequency tolerance, rise and fall time tolerance, duty cycle tolerance, output level tolerances, maximum device current, and VCXO control input voltage and frequency deviation can be entered.
* Tabulated and archive data, checked at 3 input voltages, includes serial number of the device under test, frequency deviation from nominal, output voltage, rise time, fall time, duty cycle, VCXO frequency deviation, device input current, and enable/disable function check.
* Data can be printed or exported into popular spreadsheet programs and statistically analyzed.
* Frequency verses counter reading number can be plotted to analyze frequency drift vs. time.

* Control of the frequency counter measurements: rise time, fall time, duty cycle, and output voltage levels of the device under test for off-line testing.
* Control of the multimeter measurements: current, voltage, and resistance for off-line testing.
* Hard copy printout of the waveform of the unit under test showing, rise/fall times, duty cycle, and overshoot.
* Start up time can be manually measured off-line.

STANDARD INSTRUMENT PACKAGE

PACKAGE INCLUDES:

PC301 Test Module
PC301 Control Software
All necessary cables to operate the PC301 and the external equipment
1 500 MHz Digitized Oscilloscope
1 Frequency Counter
1 Multimeter
1 Triple Output Power Supply
1 Computer with Microsoft Windows installed
1 Compatible Printer
1 IEEE 488 Interface Board
1 BenchLink/Meter software
1 BenchLink/Scope software
1 10 MHz Frequency Standard, external or included in frequency counter

PC301 EQUIPMENT NOT INCLUDED:

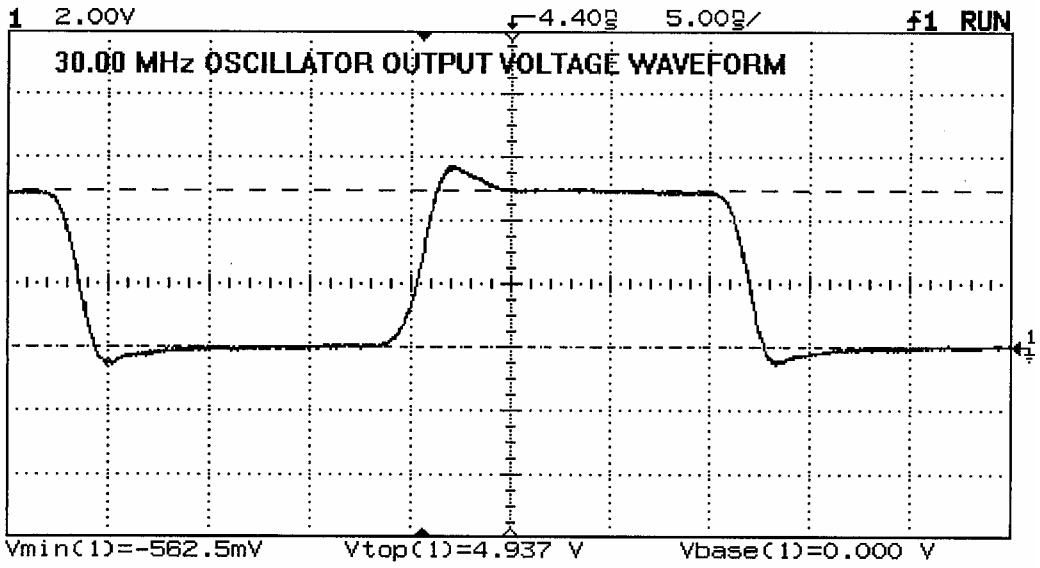
Special adapters to measure odd size and stand-alone oscillators.
Adapters to measure surface mounted oscillators.

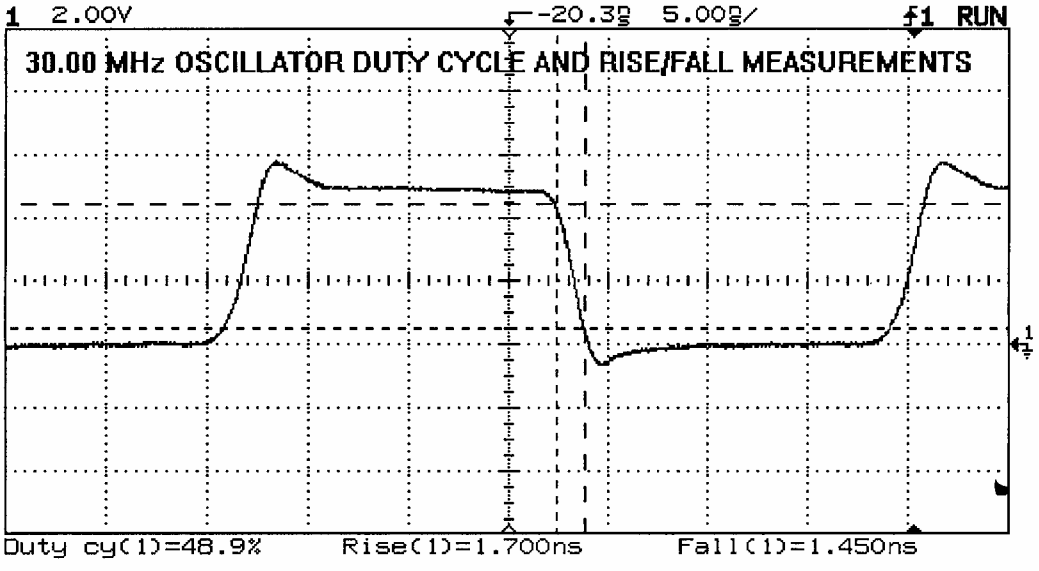
AVAILABLE OPTIONS

Spare Parts Kit and Repair Manual.
On-site training to install and operate the instrument.
Adapters to measure surface mounted oscillators.
Special adapters to measure odd size and stand-alone oscillators.

PRECISION CONTROL

TYPICAL WAVEFORM PRINTOUTS WHEN USING H.P. BENCHLINK SOFTWARE





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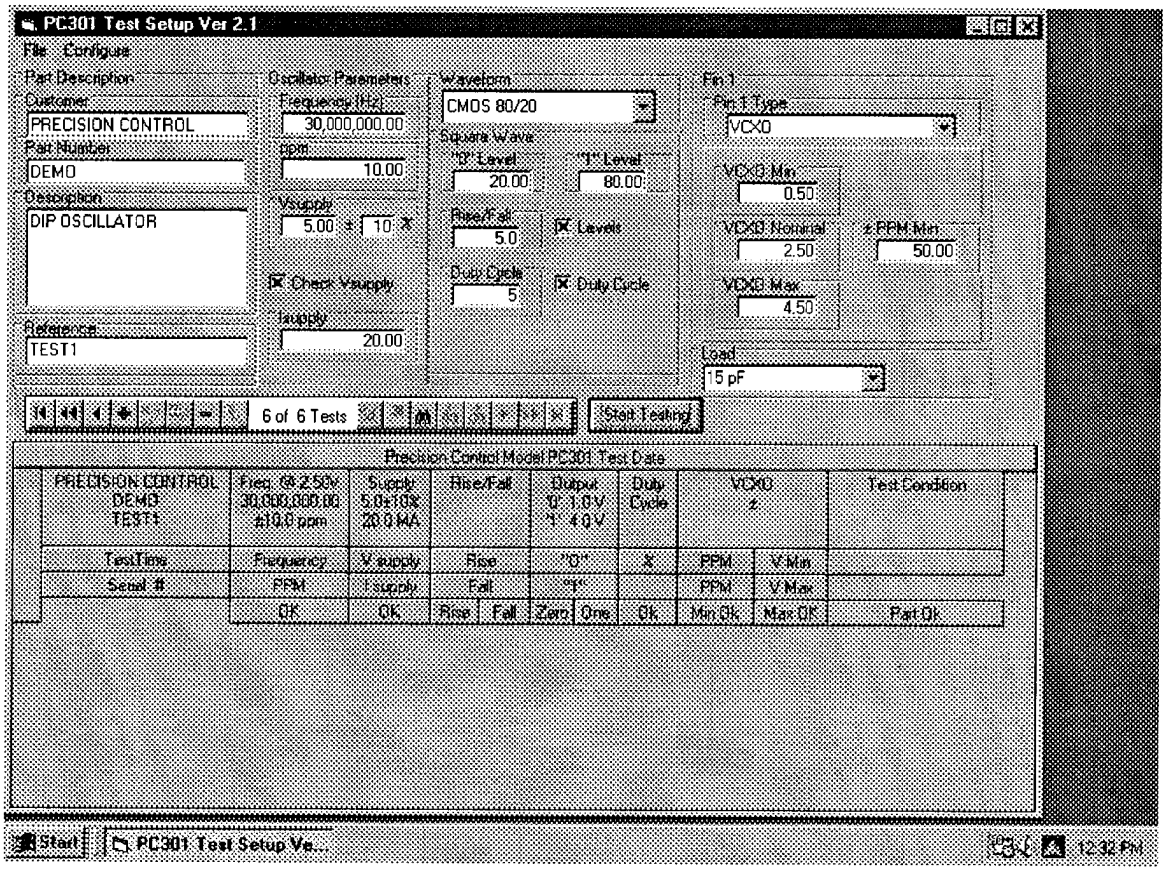
PRECISION CONTROL

PC301 TESTING SET UP SCREEN



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TYPICAL PRINTED OUTPUT DATA SHEET

Precision Control Model PC301 Test Data

PRECISION CONTROL VCXO 1	Freq. @ 2.50V 14,500,000.00 ±30.0 ppm	Supply 5.0±10% 30.0 MA	Rise/Fall 5.0 ns		Output '0' 0.5 v '1' 4.5 V		Duty Cycle 40.0%	VCXO ±100.0 PPM Minimum		Test Condition
Test Time	Frequency	V supply	Rise		"0"		%	PPM	V Min	
Serial #	PPM	I supply	Fall		"1"			PPM	V Max	
	OK	OK	Rise	Fall	Zero	One	Ok	Min Ok	Max Ok	Part Ok
07/26/99 08:33	14,500,212.00	4.504	1.61		-0.09		49.92	-202.55	0.50	CMOS 90/10, 15 pF
1	14.62	9.55	1.40		4.50			187.24	4.50	
07/26/99 08:33	14,500,124.00	4.998	1.56		-0.09		50.04	-198.27	0.50	CMOS 90/10, 15 pF
1	8.55	11.40	0.83		4.99			179.31	4.50	
07/26/99 08:33	14,500,036.00	5.492	1.35		-0.09		50.15	-193.45	0.50	CMOS 90/10, 15 pF
1	2.48	13.50	1.14		5.48			172.34	4.50	
07/26/99 08:34	14,500,124.00	4.503	1.56		-0.09		50.49	-177.65	0.50	CMOS 90/10, 15 pF
2	8.55	9.54	0.08		4.45			191.38	4.50	
07/26/99 08:34	14,500,082.00	4.998	1.46		-0.09		49.92	-175.93	0.50	CMOS 90/10, 15 pF
2	5.66	11.38	1.51		4.99			182.48	4.50	
07/26/99 08:34	14,500,035.00	5.493	1.46		-0.09		50.04	-173.93	0.50	CMOS 90/10, 15 pF
2	2.41	13.45	1.35		5.48			175.17	4.50	
07/26/99 08:35	14,500,183.00	4.504	1.56		-0.09		50.23	-214.07	0.50	CMOS 90/10, 15 pF
3	12.62	9.65	1.40		4.50			203.17	4.50	
07/26/99 08:35	14,500,099.00	4.999	1.40		-0.09		50.11	-209.72	0.50	CMOS 90/10, 15 pF
3	6.83	11.51	1.30		4.99			194.83	4.50	
07/26/99 08:35	14,500,014.00	5.493	1.40		-0.09		50.23	-205.10	0.50	CMOS 90/10, 15 pF
3	0.97	13.62	1.35		5.48			187.31	4.50	

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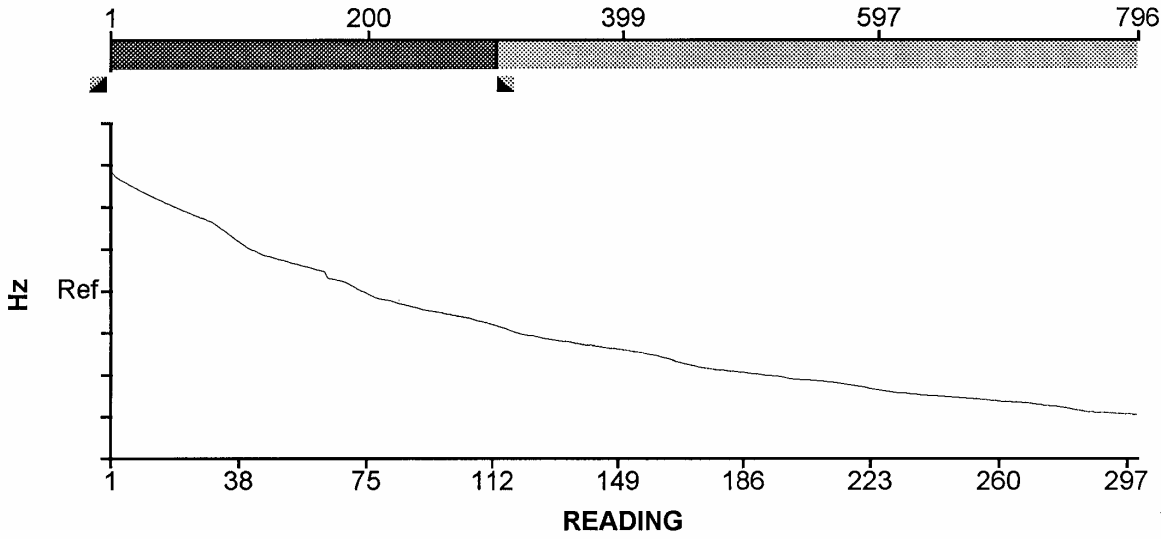
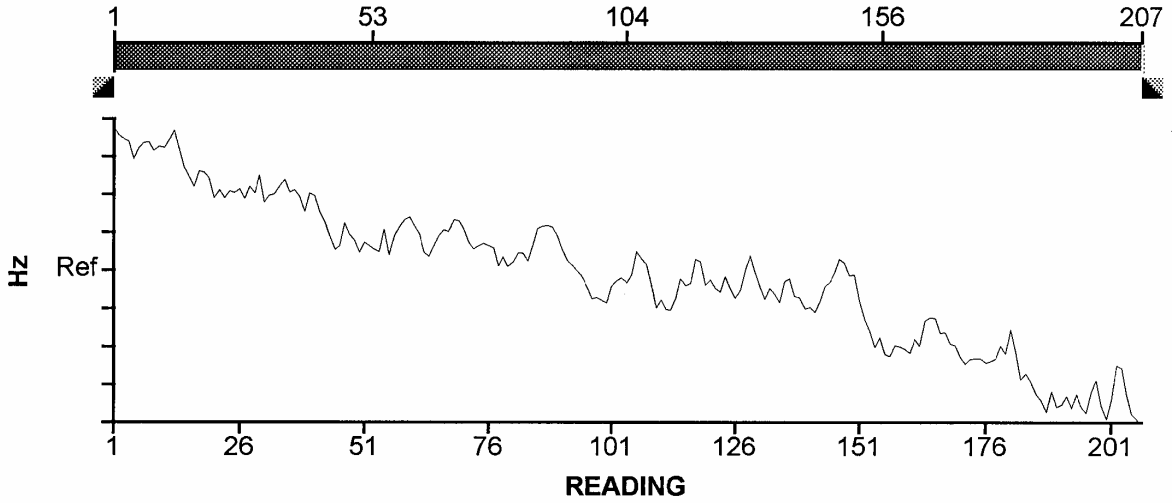
TYPICAL FREQUENCY STABILITY PRINTOUTS WHEN USING H.P. BENCHLINK SOFTWARE



Ref 30.00015387149 MHz
10.000 Hz/Div



Ref 30.00010538148 MHz
200.000 mHz/Div

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