

400MHz Universal Frequency Counter

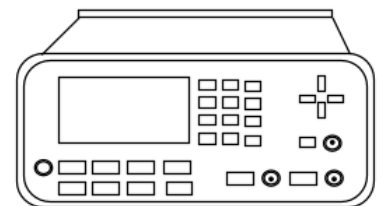


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12 Digits Resolution - 6 GHz Frequency Measurements



BNC	model	1105
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Real-Time DSP, Easy LAN Control With Comprehensive GUI

- Up to 6GHz, Standard
- Frequency: 1MHz - 400MHz
- Time Interval Resolution: 40pS
- IEEE488.2 and USBTMC Compliance

BNC**model****1105**

A new counter, Model 1105, from Berkeley Nucleonics compares favorably to existing counters. The 1105 has 12 digits of frequency resolution and 40 ps of time interval resolution. The real-time DSP front-end facilitates faster measurement throughput. Compare our specifications and price to the Agilent 53132A or the Fluke PM6685.

We have made the front panel controls more user-friendly. The SCPI software commands are compatible with the most commonly-used counters so you do not have to rewrite your software. Our LAN control feature lets you control one or several 1105's from your computer with displays of the control or measurement function you want.

Impressive 12 Digits Resolution & 6 GHz Frequency Measurements

The Model 1105 includes a RF Channel 3 with a range from 375 MHz to 6GHz and standard Channels 1 & 2 from 1 mHz to 400 MHz. Up to 20 frequently-used setups may be stored in memory. Our design features full front-end isolation.



Packed with Many New Features

The BNC Model 1105, ISO 9001 compliant, gives users of existing counters all the measurement capability they are used to, with a few exciting new twists. Our new counter provides great features including Frequency & Ratio (11 digits/sec.), Time interval, Period (2.5 ns to 1000s), Duty Cycle, Pulse Width, Rise/Fall Time, Peak Volts (100 Hz~300 MHz), Phase, Totalize, with a time base temperature stability of < 1 PPM and aging rate of < 2 PPM per year and timebase in/out channels. (figure 2) One can measure the peak voltage of incoming waveforms as well.

The BNC Model 1105 offers built-in statistics and math functions. Users can measure and display mean, min/max, delta & standard deviation (Figure-4). These apply to period, frequency, time interval, risetime and peak voltage measurements. Scale & offset can be easily used in compensating for systematic occurrences.

All functions are controlled by either the front panel or via remote control. USB control is standard; GPIB is optional. Data logging to a spreadsheet is easily accomplished with free software. Of interest is the Ethernet connectivity via your LAN, using your IP address. You can control and display the parameters of several 1105's from your local computer.

Fast Measurement & Special Applications

Besides the real-time DSP (digital signal processing) technology, which speeds the measurement process, a Limit Mode allows users to set margins according to their specific measurements. Go-NoGo commands can be issued via the USB. You may control what happens when a limit is exceeded eg. store current data, stop measuring and generate an output signal to trigger an external device.



Handy Software & Familiar SCPI Commands

Users can obtain data logs (see Figure9) in Excel via USB or via an optional GPIB interface. Our web-support mode allows the 1105 to be connected to your office LAN (see Figure 10). Users simply call up an Ethernet address (Default: 192.168.0.247) on a local web browser. In addition, we have SCPI commands that are compatible with the Agilent 53132A. Shown above is the 1105-HF option, which expands Ch.3 measuring range to 250MHz-20.0GHz

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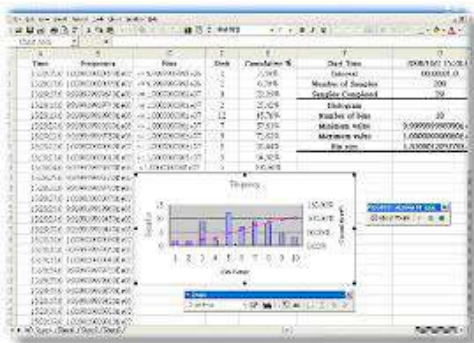
1105

Signal Input Range	LVTTTL and TTL compatible	
Timing Restrictions		
Pulse Width	> 50 ns	
Transition Time	< 250 ns	
Start-to-Stop Time	> 50 ns	
Damage Level	12 Vrms	
External Arm Input Characteristics		
Impedance	1 k Ω	
Input Capacitance	17 pF	
Start Slope	Positive or Negative	
Stop Slope	Positive or Negative	
Notes	1. External Arm is available for all measurements except Peak Volts. 2. External Arm is referred to as External Gate for some measurements.	
Internal Time Base Stability		
	Standard (0° to 50°C)	High Stability Oven (1105-opt01)
Temperature Stability (referenced to 25°C)	$\pm 1 \times 10E-6$	$\pm 5 \times 10E-9$
Aging Rate	Per Day	$\pm 8 \times 10E-10$
	Per Month Per Year	$\pm 8 \times 10E-8$
Turn-on stability vs. time (30 min.)		$\pm 2.0 \times 10E-8$ (referenced to 24 hours)
Calibration	Electronic	Electronic
External Time Base Input Specifications		
Voltage Range	200 mVrms to 10 Vrms	
Damage Level	12 Vrms	
External Time Base Input Characteristics		
Threshold	0 V	
Impedance	1 k Ω	
Input Capacitance	25 pF	
Input Frequency	10 MHz	
Internal vs. External Time Base Selection	Manual	Select Internal or External
	Automatic	Internal used when External not present (default)
Time Base Output Specifications		
Output Frequency	10 MHz	
Voltage	570 mVpp (0 dBm), typical	
Impedance	50 Ω (typical), AC coupled	
Measurement Specifications		
Frequency, Period Channel 1 and 2	1 mHz to 400 MHz (2.5 ns to 1000 s)	
Trigger	Default setting is Auto Trigger at 50 %	
"Auto" Gate Time	0.1 sec	
STD CH 3	375 MHz to 6 GHz (0.166 ns to 2.6 ns)	

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Web-support mode allows the 1105 to be connected to your office LAN.

Model 1105-HF option, which expands Ch.3 measuring range to 250MHz-20.0GHz