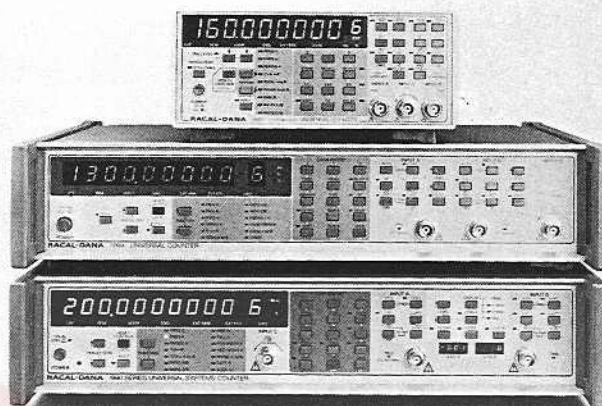


Racal
Instruments

UNIVERSAL COUNTER/TIMERS AND FREQUENCY COUNTERS



Racal Instruments Pioneers Technical Advances

Higher stability, faster speeds, down-sized formats and sophisticated processing are requirements driving the development of time and frequency products. Racal Instruments has been at the forefront of this effort for over twenty years with the introduction of the first counter-on-a-chip, Series 9900, and the first microprocessor controlled counter/timer, Series 9000. The Series 1990 counter/timers make important features such as high resolution and digital trigger control affordable for bench as well as systems applications.

Most recently, the first high performance counter/timer, Model 2251 was developed in the VXI instrument-on-a-card format. This feat was followed by the design of the first Time-Interval Analyzer on a card, the VXI-based Model 2351.

These measurement instruments are joined by Racal Instruments' experience in the production of a frequency standards, Model 9475, and a distribution system, Model 9480. Offerings also include VXI-based rubidium oscillators and distribution capability in the Model 3351.

High Performance on a Card

Downsizing high performance instrumentation into the VXI format for systems applications, allows users to gain significantly in space, power and cooling resources. System requirements such as triggering, compact signal routing and common clocks are enhancements gained by configuring high performance instruments in the VXI format. These signals are now all available from the backplane, reducing cabling and interfacing.

Because the capabilities of the instruments are not compromised by the VXI format, these modules are right at home in analyzing; jitter in analog components; frequency and pulse characterization of communication signals and radar; frequency and pattern verification in electronic warfare systems; and phase measurement of laser interference patterns.

From metrology labs to satellite communication sites, portable calibration requirements to automated RF and microwave test stands, these instruments provide the highest performance for bench and ATE applications.

UNIVERSAL TIMER/COUNTERS

In addition to frequency and period, most Universal Counter/Timers also measure time interval, pulse width, ratio, totalize and phase. Racal Instruments counters range from low-cost units to those offering many enhanced features typically available only on instruments in much higher price brackets. These include one nanosecond single-shot time interval resolution, as well as complete programmability, external arming and battery portability.

Enhanced features available in the full-rack models include averaging, automatic pulse parameter, measurements of rise and fall times, non-volatile memory to permit storage of setups for ease of recall, a wide ± 250 Volt operating range, hysteresis compensation for improved accuracy, internal calculation of the mean, maximum, minimum and standard deviation of a measurement sample together with fast data output rates.

Model	Frequency Range	Resolution	Trigger Level	Features	Options
1991	DC-160MHz	9 digits/sec, 1nSec	Auto, ± 51 V	Full math, phase, peak amplitude, delay, high resolution, half rack width	Battery, GPIB, reference multiplier
1992	DC-1.3GHz	9 digits/sec, 1nSec	Auto, ± 51 V	As 1991 with 1.3GHz bandwidth	Battery, GPIB reference multiplier
1994	DC-160MHz	9 digits/sec, 1nSec	Auto, ± 51 V	GPIB, averaging, amplitude, pulse parameters, math	1.3GHz input channel, reference multiplier
1995	DC-200MHz	9 digits/sec, 1nSec	Auto, ± 250 V	GPIB, statistical measurement, slew, pulse parameters, amplitude displays	Rubidium standard, MATE ¹ version
1996	DC-1.3GHz	9 digits/sec, 1nSec	Auto, ± 250 V	As 1995 with 1.3GHz bandwidth	Rubidium Standard, MATE ¹ version
¹ MATE is the Modular Automated Test Equipment standard for U.S. Air Force applications					

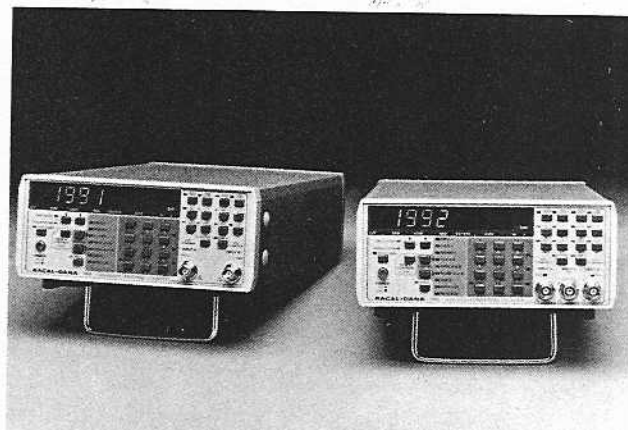
General Options for the 1990 Series Counter Range

Option 01	Rear Panel Inputs
Option 04T	TCXO
Option 04A	Ovened Oscillator
Option 04B/04E	Higher Stability Ovened Oscillators
Option 07	Rechargeable Battery Pack and External DC Operation
Option 10	Reference Frequency Multiplier
Option 55	GPIB Interface (Standard on 1994, 1995, 1996)

BRIEF SPECIFICATIONS

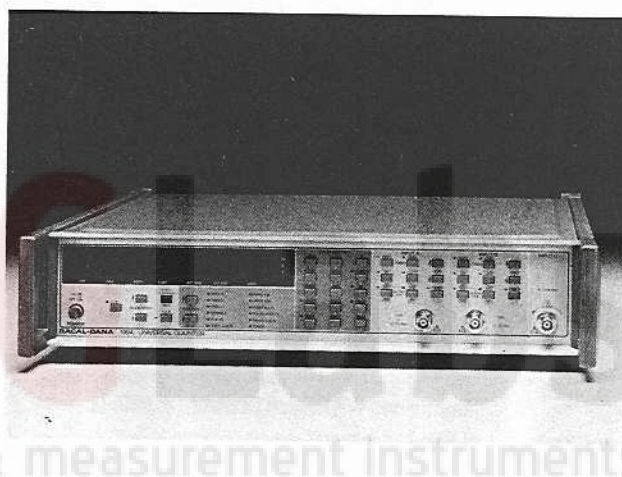
Models 1991 and 1992 High Resolution/Programmable

- Direct Frequency Measurement to over 1.3GHz(1992)
- InSec Single-shot Time Interval Resolution
- 9 Digit Resolution in 1 Second
- Auto Trigger Over a $\pm 51V$ Range
- Full GPIB Control (optional)
- Phase Measurement
- Peak Amplitude Measurement
- Math Capability
- Battery Operation (optional)



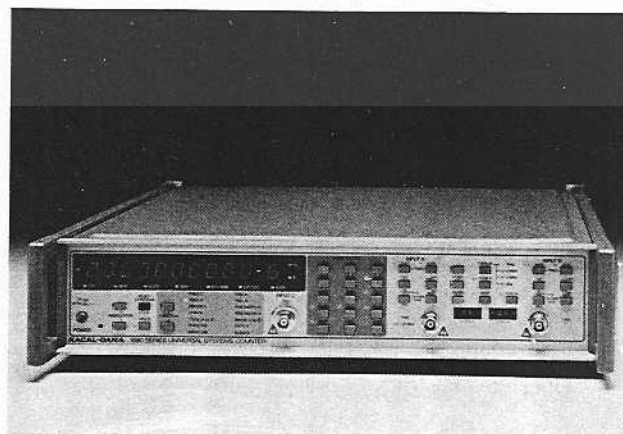
Model 1994 System Counters

- InSec Single-shot Time Interval Resolution
- 9 Digit Resolution in 1 Second
- Comprehensive External Arming
- Direct Frequency Measurement to 160MHz (optional 1.3 GHz)
- Peak Amplitude Measurement
- Auto Trigger Over a $\pm 51V$ Range
- Phase Measurement
- Averaging
- Full GPIB Programmability (standard)



Models 1995 and 1996 Sophisticated Systems Counters

- InSec Single-shot Time Interval Resolution
- 9 Digit Resolution in 1 Second
- Comprehensive External Arming
- Pulse Parameter Measurements
- Peak Signal Amplitude Measurement
- Auto Trigger Over a $\pm 250V$ Range
- Phase, Slew and Duty Cycle
- Separate Amplitude Displays
- Programmable Measurement Time
- Full GPIB Programmability (standard)
- Optional MATE Interface



For full specifications and data sheets please call the number below.

♦Racal Instruments♦ ☎(800) 722-2528 or FAX (714) 859-2505