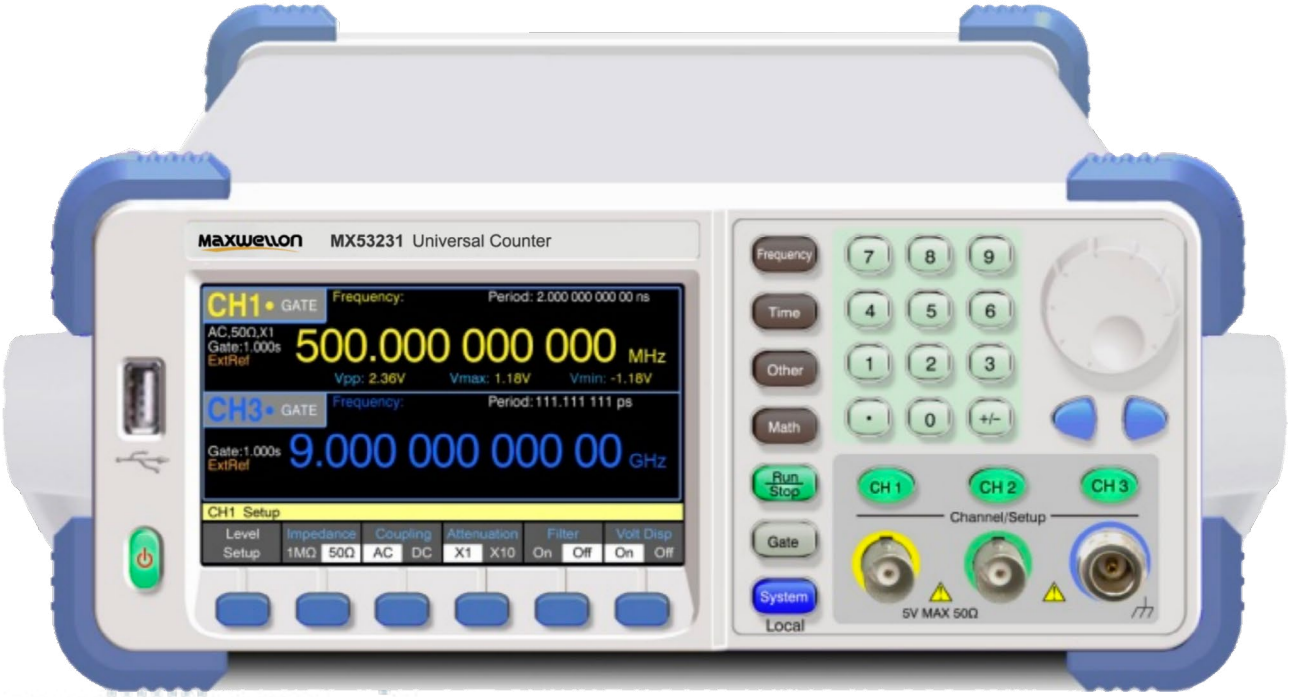
Quality&**Precise**



MAXWELLON
MX53231

0.14mHz ~ 500 MHz/ 1.5GHz/ 2.5GHz/ 3GHz/ 6GHz/ 9GHz/ 20GHz /40GHz

High Accurate Universal Counter

2026

Maxwellon

The **Maxwellon MX53231 Series Universal Counter** is a high-precision frequency and time measurement instrument. Featuring a frequency measurement resolution of 12 digits/second and a single-shot time resolution of 50 ps, it is driven by a high-performance internal microcontroller.

The instrument utilizes reciprocal counting technology, curve-fitting algorithms, and digital interpolation to achieve exceptional measurement accuracy. It offers comprehensive measurement functions including frequency, period, totalize, time interval, pulse width, duty cycle, rise/fall time, frequency ratio, and phase. Additionally, it features powerful mathematical and statistical capabilities (maximum, minimum, average, standard deviation, and Allan variance).

Highly reliable and cost-effective, the MX53231 offers a wide measurement range, high sensitivity, and a large dynamic range. It is particularly well-suited for time and frequency measurements in aerospace, crystal oscillator testing, electronic component manufacturing, metrology, and scientific research.

Key Feature

- **High Precision & Resolution:** Advanced TDC technology delivers up to 12 digits/s frequency resolution and 50 ps single-shot time resolution.

- **Versatile Dual-Channel:** Simultaneously measure frequency, period, duty cycle, pulse width, or totalize across two independent channels, with gap-free continuous measurement support.

- **Extended RF Capabilities:** Optional Channel 3 extends high-frequency measurements up to 40 GHz to meet diverse testing requirements.

- **Comprehensive Analysis:** Built-in math operations, limit testing, and advanced statistics (Max/Min/Average/Allan variance) with intuitive histogram and trend chart displays.

- **Robust Connectivity:** Standard RS232, LAN, and USB interfaces. Includes a USB Host port for direct data logging to a flash drive.

- **Intuitive Operation:** 4.3-inch color TFT LCD screen with a user-friendly interface and support for 10 storable measurement setups.

Technical Specifications

Measurement & Analysis Capabilities	
Category	**Description**
Measurement Functions	Frequency, Frequency Ratio, Time Interval, Period, Positive/Negative Pulse Width, Rise/Fall Time, Duty Cycle, Phase (Channel 1 to Channel 2), Totalize, Continuous Frequency Measurement.
Analysis Functions	Limit Testing, Mathematics Operations, Statistics (Max, Min, Average, PPM, Standard Deviation, Allan Variance, etc.), Histogram Graph, Trend Chart Graph.

Input Characteristics & Performance	
Specification	**Details**
Frequency Range (Ch 1 & 2)	0.14 mHz ~ 500 MHz
Frequency Range (Ch 3 - Opt)	Option I: 100 MHz ~ 1.5 GHz
	Option II: 100 MHz ~ 2.5 GHz
	Option III: 100 MHz ~ 3 GHz
	Option IV: 100 MHz ~ 6 GHz
	Option V: 500 MHz ~ 9 GHz
	Option VI: 500 MHz ~ 20 GHz
	Option VII: 500 MHz ~ 40 GHz
Dynamic Range & Sensitivity	50 mVrms ~ 10 Vrms (< 100 kHz)
	50 mVrms ~ 5 Vrms (> 100 kHz)
Frequency Resolution	12 digits / second
Time Interval Resolution	50 ps (Single-Shot)
Period Measurement	2 ns ~ 7000 s
Phase Measurement	-180° ~ 360°
Input Impedance (Ch 1 & 2)	1 MΩ or 50 Ω (Independently selectable)
Input Impedance (Ch 3)	50 Ω
Coupling (Ch 1 & 2)	AC or DC
Coupling (Ch 3)	AC
Low Pass Filter	100 kHz (Switchable)
Attenuation	×1 or ×10
Trigger Mode	Rising or Falling edge (Selectable)
Trigger Level	-5V to +5V (Adjustable)
Damage Level	15 Vrms
External Time Base	5 MHz / 10 MHz
Daily Aging Rate	5×10^{-9} / day

General Specifications	
Specification	**Details**
Standard Interfaces	RS232, LAN, USB Device, USB Host
Optional Interfaces	Centronics (Standard Printer Interface), GPIB (IEEE488)
Display	4.3-inch color TFT LCD
Power Supply	100~240V, 50Hz ±5%
Dimensions (W × D × H)	260 mm × 290 mm × 105 mm
Weight	2.2 kg

Ordering Information

Standard Model

Model	Description	Standard Accessories
MX53231	Maxwellon Universal Counter (Base Model, Ch1 & Ch2: 0.14 mHz ~ 500 MHz)	Standard interfaces: RS232, LAN, USB.

Channel 3 Frequency Options (Select One)

Model	Name	Frequency Range
Opt-I	Channel 3 Frequency Extension	100 MHz ~ 1.5 GHz
Opt-II	Channel 3 Frequency Extension	100 MHz ~ 2.5 GHz
Opt-III	Channel 3 Frequency Extension	100 MHz ~ 3.0 GHz
Opt-IV	Channel 3 Frequency Extension	100 MHz ~ 6.0 GHz
Opt-V	Channel 3 Frequency Extension	500 MHz ~ 9.0 GHz
Opt-VI	Channel 3 Frequency Extension	500 MHz ~ 20 GHz
Opt-VII	Channel 3 Frequency Extension	500 MHz ~ 40 GHz

Interface Upgrades

Model	Name
Opt-GPIB	IEEE488 (GPIB) Communication Interface
Opt-PRNT	Centronics Standard Printer Interface

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