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Data Sheet

August 14, 2026

FLUKE

Fluke PM6681R Rubidium Universal Counter

Fluke PM6681R Rubidium Timer Counter Calibrator The Fluke PM6681R is a timer/counter/analyzer with built-in rubidium frequency reference for calibration-grade frequency and time-interval measurements. OEM PM 6680B/PM 6681/PM 6681R literature and Pendulum CNT-81R equivalent tables list 300 MHz standard input range, 11 digits per second frequency resolution, 50 ps single-shot / 1 ps averaged time-interval resolution, 1.25 mV vertical resolution, and rubidium aging on the order of 5×10^{-11} per month. Frequency calibrator and reference counter roles, burst and continuous frequency measurements, high-resolution time-interval and phase work, and GPIB automated calibration of oscillators and synthesizers. The Fluke PM6681R is a timer/counter/analyzer with built-in rubidium frequency reference for calibration-grade frequency and time-interval measurements. OEM PM 6680B/PM 6681/PM 6681R literature and Pendulum CNT-81R equivalent tables list 300 MHz standard input range, 11 digits per second frequency resolution, 50 ps single-shot / 1 ps averaged time-interval resolution, 1.25 mV vertical resolution, and rubidium aging on the order of 5×10^{-11} per month. Frequency calibrator and reference counter roles, burst and continuous frequency measurements, high-resolution time-interval and phase work, and GPIB automated calibration of oscillators and synthesizers.



MODEL

Fluke PM6681R

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

PM6681R

LISTING

<https://aumictechlabs.com/products/pm6681r-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Fluke PM6681R Rubidium Universal Counter is a precision frequency measurement and time interval analysis instrument built around an ultra-stable rubidium atomic clock reference. It delivers 11-digit resolution (1 μ Hz) across a standard 300 MHz range, expandable to 4.5 GHz with optional prescalers, making it suitable for metrology, telecommunications, and laboratory calibration work. The instrument combines exceptional time-base accuracy ($\pm 5 \times 10^{-9}$) with dual-channel inputs, single-shot time interval resolution to 50 ps, and high-speed measurement capability of up to 40k readings/second in period mode.

Technical Specifications

Frequency Measurement Standard range: 300 MHz Optional range: Up to 4.5 GHz (PM9625B), 2.7 GHz (PM9624) Minimum frequency: 10×10^{-10} Hz Resolution: 11 digits/second or 1 μ Hz Internal memory rate: Up to 8k readings/s GPIB rate: Up to 250 readings/s Period measurements: Up to 40k readings/s (back-to-back) Time Interval Single-shot resolution: 50 ps Averaged resolution: 1 ps Time delay range: 3.3 ns to 1010 s Trigger hold-off range: 60 ns to 1.34 s (10 ns resolution) Input Characteristics Impedance: 1 M Ω // 30 pF or 50 Ω (VSWR $\leq 2:1$) Sensitivity: 20 mV rms 200 mV rms Reference output: 5 $\times$ 10 MHz & 1 $\times$ 5 MHz >0.5 V rms into 50 Ω Physical Dimensions: 315 mm (W) $\times$ 86 mm (H) $\times$ 395 mm (D) Weight: 4.8 kg net; 7.8 kg shipping Power: 100–240 V AC, 50/60 Hz

Key Features Two independent measurement channels with arming input support GPIB interface and SCPI command compatibility for remote automation Vertical resolution: 1.25 mV Optional reference output buffer (PM9671B) with six buffered 1 V rms outputs Prescaler options extend capability to 4.2 GHz (PM9625B)

Typical Applications Precision frequency calibration, time interval measurement, phase noise analysis, atomic clock characterization, and telecommunications signal validation.

Compatibility & Integration GPIB interface included. Supports external 10 MHz time-base input. Optional rackmount kit (PM9622) and high-stability oven time-base (PM9691) available.

Features & description

From manufacturer datasheet

Built-in rubidium frequency reference

11 digit per second frequency resolution 50 ps single-shot time interval resolution Continuous single-period measurements to 40k readings/s Hold-off and arming delay for complex signals Technical Specifications Instrument Family: Fluke PM6681R Standard Frequency Range Input A: DC to 300 MHz DC coupled; 10 Hz to 300 MHz AC coupled Frequency Resolution 1 s Gate: 11 digits Time Interval Single Shot: 50 ps Time Interval Averaged: 1 ps Vertical Resolution Vp p: 1.25 mV Sensitivity Less Than 100 MHz: 20 mV rms Sensitivity 100 To 200 MHz: 25 mV rms Sensitivity 200 To 250 MHz: 40 mV rms Sensitivity Above 250 MHz: 60 mV rms Input Impedance: 1 MOhm/15 pF or 50 Ohm VSWR 2:1 Attenuation: x1 or x10 Hysteresis Window x1: 20 mV p-p GPIB Measurement Rate: 250 readings/s Internal Memory Rate: 8k readings/s Back To Back Period Rate: up to 40k readings/s Internal Memory Size: up to 6100 readings Rubidium Aging Per Month Class: 5×10^{-11} per month class Reference Outputs PM6681R: 5×10 MHz and 1×5 MHz greater than 0.5 V rms into 50 Ohm Arming Input Frequency Range: DC to 100 MHz Optional Microwave Inputs Class: options to 2.7 GHz / 4.5 GHz class per brochure Form Factor: benchtop timer counter Remote Interface: GPIB

PM6681R Characteristics / Specifications

PARAMETER	VALUE
Instrument Family	Fluke PM6681R
Standard Frequency Range Input A	DC to 300 MHz DC coupled; 10 Hz to 300 MHz AC coupled
Frequency Resolution 1 s Gate	11 digits
Time Interval Single Shot	50 ps
Time Interval Averaged	1 ps
Vertical Resolution Vp p	1.25 mV
Sensitivity Less Than 100 MHz	20 mV rms
Sensitivity 100 To 200 MHz	25 mV rms
Sensitivity 200 To 250 MHz	40 mV rms
Sensitivity Above 250 MHz	60 mV rms
Input Impedance	1 MOhm/15 pF or 50 Ohm VSWR 2:1
Attenuation	x1 or x10
Hysteresis Window x	20 mV p-p
GPIB Measurement Rate	250 readings/s
Internal Memory Rate	8k readings/s
Back To Back Period Rate	up to 40k readings/s
Internal Memory Size	up to 6100 readings
Rubidium Aging Per Month Class	5×10 ⁻¹¹ per month class
Reference Outputs PM6681R	5× 10 MHz and 1× 5 MHz greater than 0.5 V rms into 50 Ohm
Arming Input Frequency Range	DC to 100 MHz
Form Factor	benchtop timer counter
Remote Interface	GPIB
Operating Temperature Class	laboratory ambient
Specification Ambient Class	laboratory ambient unless OEM table states otherwise
Related Software	TimeView time and frequency analysis

PARAMETER	VALUE
Series Family	Fluke PM6681 / Pendulum CNT-81R
Operating temperature	Class: laboratory ambient

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Class: laboratory ambient
Operating Temperature	Class: laboratory ambient
Operating Temperature Class	laboratory ambient
Specification Ambient Class	laboratory ambient unless OEM table states otherwise
Related Software	TimeView time and frequency analysis
Series Family	Fluke PM6681 / Pendulum CNT-81R Notes From Fluke PM 6680B / PM 6681 / PM 6681R brochure and Pendulum CNT-81 (Fluke PM6681) datasheet comparison tables for theRrubidium model. Confirm installed microwave input options and rubidium lock status on the calibration certificate.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Specifications	
PARAMETER	VALUE
Instrument Family	Fluke PM6681R
Standard Frequency Range Input A	DC to 300 MHz DC coupled; 10 Hz to 300 MHz AC coupled
Frequency Resolution 1 s Gate	11 digits
Time Interval Single Shot	50 ps
Time Interval Averaged	1 ps
Vertical Resolution Vp p	1.25 mV
Sensitivity Less Than 100 MHz	20 mV rms
Sensitivity 100 To 200 MHz	25 mV rms
Sensitivity 200 To 250 MHz	40 mV rms
Sensitivity Above 250 MHz	60 mV rms
Input Impedance	1 MOhm/15 pF or 50 Ohm VSWR 2:1
Attenuation	x1 or x10
Hysteresis Window x1	20 mV p-p
GPIB Measurement Rate	250 readings/s
Internal Memory Rate	8k readings/s
Back To Back Period Rate	up to 40k readings/s
Internal Memory Size	up to 6100 readings
Rubidium Aging Per Month Class	5x10^-11 per month class
Reference Outputs PM6681R	5x 10 MHz and 1x 5 MHz greater than 0.5 V rms into 50 Ohm
Arming Input Frequency Range	DC to 100 MHz
Optional Microwave Inputs Class: options to 2.7 GHz / 4.5 GHz class per brochure	
Specifications	
PARAMETER	VALUE
Form Factor	benchtop timer counter
Remote Interface	GPIB

PARAMETER	VALUE
Operating Temperature Class	laboratory ambient
Specification Ambient Class	laboratory ambient unless OEM table states otherwise
Related Software	TimeView time and frequency analysis
Series Family	Fuke PM6681 / Pendulum CNT-81R

Notes

From Fuke PM 6680B / PM 6681 / PM 6681R brochure and Pendulum CNT-81 (Fuke PM6681) datasheet comparison tables for theRrubidium model. Confirm installed microwave input options and rubidium lock status on the calibration certificate.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.