

UNI-T

UT-PD2500/1500 Active Differential Probe

2.5GHz | 150ps | 10:1 | $\pm 4V$ | 200k Ω | 1pF



Data Sheet REV2.0

2025.09

UT-PD2500 Overview

UT-PD2500 and UT-PD1500 are high-frequency active differential probe equipped with essential features for modern high-speed signal analysis. Active differential probes are widely used in high-speed applications such as digital circuit analysis, bus analysis, and signal integrity analysis.

UT-PD2500 and UT-PD1500 enable precise and rapid signal acquisition, improving measurement accuracy and engineering efficiency.

Excellent

- Accurately measure high-speed serial signals
UT-PD2500 bandwidth: 2.5GHz
UT-PD1500 bandwidth: 1.5GHz
- High signal fidelity :
UT-PD2500 rise time $\leq 150\text{ps}$
UT-PD1500 rise time $\leq 245\text{ps}$
- Input dynamic range: $\pm 4\text{V}$
- Input common-mode range: $\pm 15\text{V}$

Functions

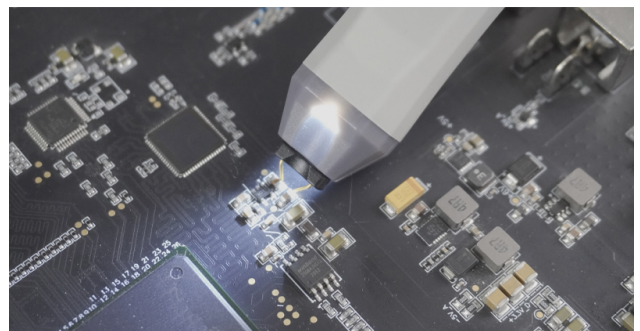
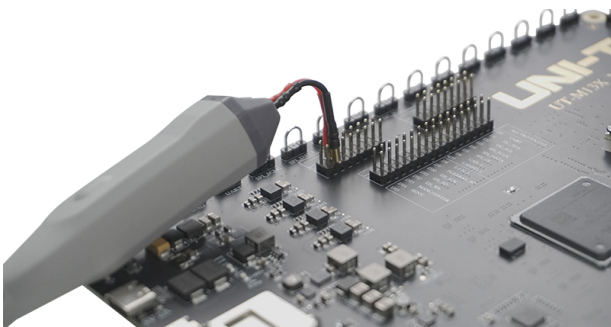
- Probe Front Light On/Off Button
- Control the oscilloscope to run/stop
- Clear the current displayed waveform and measurement values of the oscilloscope
- Control the oscilloscope to perform a forced trigger
- Automatically sense the attenuation multiple
- Automatic impedance matching
- Identify the probe model and serial number

Widely Used

- Used for the design, verification, and debugging of high-speed serial buses.
 - I2C, SPI
 - CAN, CAN-FD, LIN
 - Serial ATA
 - Ethernet (GbE)
 - USB2.0
 - FireWire (1394b)
- Signal integrity, jitter analysis, and eye diagram
- High-speed serial bus consistency analysis

Compatibility

- UNI-T Oscilloscope Series
 - MSO7000X series
 - MSO8000HD series
 - UPO7000L series
 - MSO5000HD series
 - MSO3000HD series
 - MSO3000X series



Technical Specifications

Technical Specifications	UT-PD2500	UT-PD1500
Probe Bandwidth (-3dB)	2.5GHz	1.5GHz
Rise Time	≤150ps	≤245ps
Input capacitance	≤1pF	
Input Resistance	200kΩ ±2% (differential)	
Output Impedance	50Ω	
DC Attenuation Ratio	10:1±5%	
Input Dynamic Range	8Vpp (±4V DC or peak AC)	
Input Common-mode Range	±15V (DC to 100Hz) ±2.5V (>100Hz)	
Input Offset Range	±4V	
Offset Accuracy ^{☆1}	Before calibration: <3% of the current range After calibration: <1% of the current range	
Maximum Input Voltage ^{☆2}	±30V (DC + peak AC), mains isolated	
Flatness (25°C)	DC-500MHz:0.8dB 500MHz-2GHz:1dB	DC-500MHz:0.8dB 500MHz-1GHz:1dB
Common-mode Rejection Ratio	> 40dB at 1MHz > 40dB at 30MHz > 30dB at 1GHz	
Probe Noise (Equivalent to input end)	7mVrms	
Maximum Slew Rate	30V/ns (differential) 15V/ns (single-ended)	
Zero Offset Error (Equivalent to input end) ^{☆1}	Before calibration: <30mV After calibration: <5mV	
Transmission Delay (Typical)	7.5ns	
Electronic Static Discharge	>8kV, HBM	

☆1: This indicator is met after the probe is preheated for 15 minutes.

☆2: The maximum input voltage refers to the maximum withstand voltage at the probe input end, not the voltage that the probe can measure normally.

General Specifications	
Weight	< 95g
Wire Length	1.2meters
Dimensions	103.50(mm)x19.33(mm)x18.30(mm)
Compatible Oscilloscopes	MSO7000X Series
	MSO8000HD Series
	UPO7000L Series
	MSO5000HD Series
	MSO3000HD Series
	MSO3000X Series

Environmental Requirements	
Operating Temperature	0°C to 40°C
Non-operating Temperature	-40°C to 70°C
Operating Humidity	95%RH@40°C
Non-operating Humidity	95%RH@65°C
Operating Altitude	4,600meters
Non-operating Altitude	15,300meters

Probe Function	
Probe Front Light On/Off Button	
Control the oscilloscope to run/stop	
Clear the current displayed waveform and measurement values of the oscilloscope	
Control the oscilloscope to perform a forced trigger	
Automatic Identification	
Automatically sense the attenuation multiple	
Automatic impedance matching	
Identify the probe model and serial number	
Accessory (Standard)	
UT-PD-F01	Socket-type extension wires (red), quantity × 5, suitable for 2.45mm header pins Bandwidth: 1GHz (UT-PD1500), 1.5GHz (UT-PD2500)
UT-PD-F02	Socket-type extension wires (black), quantity × 5, compatible with 2.45mm male header pins Bandwidth: 1GHz (UT-PD1500), 1.5GHz (UT-PD2500)
UT-PD-F03	Weld-in type extension wires, quantity × 5 Bandwidth: 1GHz (UT-PD1500), 1.5GHz (UT-PD2500)
UT-PD-F05	Adjustable curved needle, quantity × 5, adjustable spacing between two needle tips is 0.3mm to 12.0mm Bandwidth:100MHz
UT-PD-F06	Double-pointed needle, quantity × 5, The adjustable distance between the two needle tips ranges from 1.2mm to 11.0mm. Bandwidth:100MHz
UT-PD-F07	Impedance straight needle, quantity × 3, spacing between two needles is 6.3mm Bandwidth: 1.5GHz (UT-PD1500), 2.5GHz (UT-PD2500)
UT-PD-F08	Impedance curved needle, quantity × 3, The adjustable distance between the two needle tips ranges from 0.5mm to 12.0mm. Bandwidth: 1.5GHz (UT-PD1500), 2.5GHz (UT-PD2500)
UT-PD-F09	Tinned copper wire, quantity × 1
UT-PF01	Probe box, quantity × 2
UT-PF02	Accessories box, quantity × 1
UT-PF03	Labeling ring, quantity× 8

Limited Warranty and Liability

UNI-T guarantees that the Instrument product is free from any defect in material and workmanship within three years from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination, or improper handling. If you need a warranty service within the warranty period, please contact your seller directly. UNI-T will not be responsible for any special, indirect, incidental, or subsequent damage or loss caused by using this device. For the probes and accessories, the warranty period is one year. Visit instrument.uni-trend.com for full warranty information.



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