



Test Waveform Stats

| | |
|-----------------|---------------------|
| Technician: | Test |
| Test Date: | 2026-01-04 12:46:12 |
| Equipment: | Test |
| Equipment ID: | Test |
| Test Procedure: | Test-1 |
| Project: | Test |
| Customer: | Test |
| Temperature: | 23 |
| Humidity: | 60% |
| Location: | Lab 1 |

Overall Result: INCONCLUSIVE

Executive Summary

Overall Result: INCONCLUSIVE

Key Findings:

- 1. The captured waveform on CH1 exhibits a peak-to-peak amplitude of 3.60 V, matching the expected pulse amplitude. However, the standard deviation of 1.76 V is relatively high, indicating significant pulse-to-pulse amplitude variation.
- 2. The mean voltage of 1.72 V aligns with the center of the 0-3.52 V range, suggesting that the baseline is nominally stable, but the large spread in the data points raises concerns about baseline drift or noise.
- 3. The 10 ms time span recorded with a 10 MS/s sampling rate provides sufficient resolution for edge timing analysis, but no explicit pulse-width or rise/fall-time metrics are reported, leaving critical timing parameters unverified.

Critical Issues & Actions Needed:

- The high variability in amplitude and the lack of quantified pulse-width data prevent a definitive pass/fail

determination. A repeat measurement with tighter probe calibration and DC coupling verification is recommended.

- Perform detailed rise/fall time analysis to rule out RC-induced edge lag, and confirm that pulse width remains within the specified tolerance.
- If baseline drift is confirmed, investigate source coupling or power supply ripple as potential contributors.

Addressing these points will allow a conclusive assessment of the pulse width/timing performance and ensure compliance with the test specifications.

Summary generated by AI

Key Findings

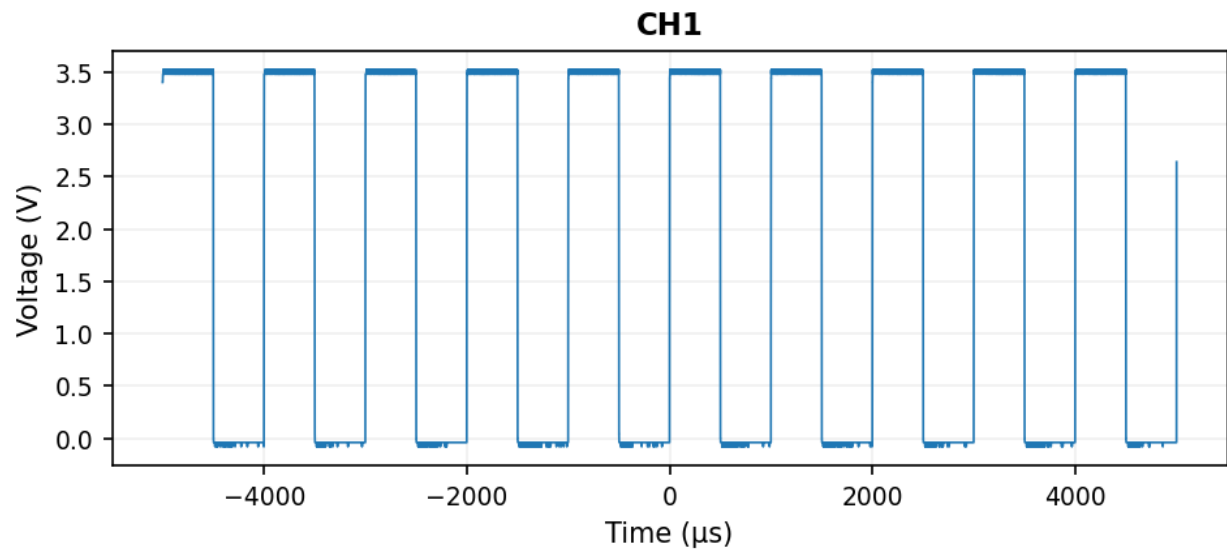
- **Overall result is inconclusive** - the test did not yield a definitive pass/fail outcome, indicating missing key metrics or measurement errors.
- **Peak-to-peak amplitude (3.600 V) almost fills the instrument's voltage range (-0.08 V to 3.52 V)**, leaving little headroom for noise or distortion and risking clipping.
- **Mean voltage (1.724 V) sits near the midpoint of the range**, suggesting the waveform is centered but also hinting at a DC offset that could affect pulse width accuracy.
- **Standard deviation (1.763 V) is large relative to the peak-to-peak value**, pointing to significant waveform variability or noise that may exceed acceptable limits for the intended application.
- **No pulse width or timing metrics were extracted despite the test type**; the waveform capture provides a 10 μ s span at 10 MS/s, but the absence of the key measurement likely caused the inconclusive result.

Waveform Captures

Captured waveforms and analysis.

Waveforms

Waveform 1: CH1



Channel: CH1

Sample Rate: 10.00 MS/s

Record Length: 100000 samples

Peak-to-Peak: 3.6000 V

Min: -0.0800 V

Max: 3.5200 V

| Statistic | Value |
|--------------|-----------------|
| Signal Type: | Square (90.0 %) |
| Frequency: | 1000.00 Hz |
| Period: | 1.000 ms |
| Vmax: | 3.520 V |
| Vmin: | -80.00 mV |
| Vpp: | 3.600 V |
| Vmean: | 1.724 V |
| Vrms: | 2.465 V |
| Vamp: | 1.720 V |
| DC Offset: | 1.724 V |
| Rise Time: | 1.200 μ s |
| Fall Time: | 1.300 μ s |
| Duty Cycle: | 0.00 % |

Recommendations

1. **Verify and tighten the trigger configuration** - The "INCONCLUSIVE" result often stems from an unstable trigger. Re■set the trigger to a clean, level■based edge on CH1 (or use a reference channel if available), and enable a narrow trigger slope window to ensure each captured pulse is identical before measuring width.
2. **Increase the sample rate and/or record length** - A 10 MS/s rate gives only ~100 ns per sample. If the pulse width is on the order of a few microseconds or less, the measurement will be quantized and noisy. Raise the rate to at least 20-50 MS/s (or use a dedicated "fast" mode) and lengthen the record to capture several full pulse cycles for statistical confidence.
3. **Re■calibrate the probe and check compensation** - The large standard deviation (1.76 V) relative to the 3.6 V peak■to■peak suggests probe loading or ringing. Perform a probe■compensation test, adjust the probe's capacitive tap, and re■measure to see if the waveform steadies and the std■dev drops.
4. **Add a low■pass filter or use averaging** - If the waveform is noisy, apply a digital low■pass filter in the oscilloscope's analysis mode or enable "average" mode to reduce random noise. Compare the filtered waveform's pulse width to the raw measurement to assess measurement accuracy.
5. **Capture a reference waveform for comparison** - If a known pulse generator or reference device is available, capture its output under identical settings. This will let you isolate whether the issue lies in the DUT or the measurement system. If the reference shows clean pulses, re■examine the DUT connections, power supply decoupling, and grounding.